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December 1985

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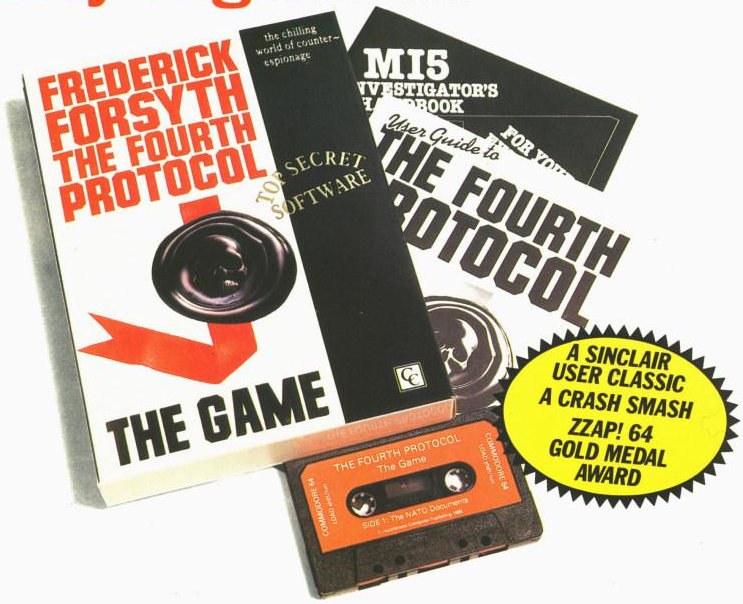

After reviews like that, what more can we say?

"I think the best thing to say about this game is BUY IT!" *ZZAP! 64*

Frederick Forsyth's THE FOURTH PROTOCOL — THE GAME is available on cassette for the Spectrum and CBM64 at £12.95 and on disk for the CBM64 at £15.95.
Published by Century Communications, a division of Century Hutchinson Ltd.
Brookmount House, 62-65 Chandos Place, London WC2N 4NW

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Editorial

CHRISTMAS is coming — Santa is installed in Sainsbury's Fairy Grotto, the decorations are up in the High Street, and shopkeepers are rubbing their hands at the thought of another orgy of commercialism. The computer industry is similarly excited — after last year's disappointing results, when a lack of new products and overstocking by retailers cast a pall of gloom over the following year, this Christmas at least offers new products and a more realistic attitude to home computers. Yes, sales are very seasonal; hardware is still expensive enough to be regarded as a special purchase, and software still entertaining enough to be regarded as a special treat (if only to oneself!) rather than an onerous necessity.

Let's hope that this Christmas, with the gleaming new 128's (and with any luck disk drives and monitors) in the shops, the fortunes of Commodore and the other UK computer companies will improve. Acorn and Sinclair seem to be at an all-time low, and despite its international scope, Commodore has just announced record losses. Perhaps it will do the home computer industry good in the long run to realise that it is not infallible.

Next Month

Horizons Show Report
All the news from the show of the year

The best of '85
Plus
Vote for your favourites and win

Plus
Competitions, news and features

EDITOR Christopher Jenkins **PRODUCTION EDITOR** Barbora Hajek **EDITORIAL SECRETARY** Geraldine Smyth **ADVERTISMENT MANAGER** Simon Langston **MANAGING EDITOR** Brendon Gore **PUBLISHING DIRECTOR** Duncan Scot **TELEPHONE (ALL DEPTS)** 01-437 4343 **TELEX** 296275 SUNRGY **UK ADDRESS** Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP **US ADDRESS** Commodore Horizons, c/o Business Press Int'l, 205 East 42nd Street, New York, NY 10017 **SUBSCRIPTIONS** UK £10.00 for 12 issues, overseas surface (excluding US and Canada) £16.00 for 12 issues, US and Canada airlifted US$33.95 for 12 issues.

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ABC

SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

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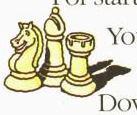

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Mail Merge

Send your letters on software, hardware, computing or life in general to Mail Merge, Commodore Horizons, 12/13 Little Newport St., London WC2H 7PP.

In the dungeon

I WONDER if there has been much response to my idea of an adventure helpline? I can offer help to any stuck in **Aztec Tomb; Ring of Power; Castle of Terror; Arrow of Death (Part 1);** and **Perseus and Andromeda.** I would like to help with **Denis through the Drinking Glass** and **Subsunk**

P Dent
Seaham
Co Durham

Response hasn't been overwhelming! All you adventurers should get writing if you want help; if our own Ken Matthews can't help you, perhaps one of the other readers can. Put quill to parchment now!

Pencil problem

WHILE I think your suggested remedy for G Howard's problem with **The Designer's Pencil** may solve the problem (Answer Back, October), you did omit one point which might be the cause of the inability to produce screen dumps.

The filename at the top right hand corner of the prompt window is in two parts; a six character name followed by an oblique, /, followed by either PRG or PIC. The program uses the last three characters during I/O operations to determine whether the picture itself or merely the program which creates it is saved or printed. If Mr Howard is using a filename such as DESIGN/PRG he will probably find that changing it to DESIGN/PIC will produce the required screen dump. I can quite understand Mr Howard's failure to realise this, as the documentation does not even mention it directly.

M R Dorey
Brockenhurst
Hants

Gooch's teams

COULD YOU pass on this little tip to owners of our **Graham Gooch's Test Cricket** for the 64. This will enable them to save the teams they have created on to tape or disk, and thus avoid having to type it all in again if they want to play the same teams in future.

1) Load and run the SELECT program, and enter the teams as normal.

2) At the end when the program exits to Basic, enter the following; POKE 43,0: POKE 44,192: POKE 45,40: POKE 46, 194: POKE 56,200: CLR: SAVE "TEAMS" (,8 if using disk).

3) When the teams have been saved, switch the 64 off then on again to reset the pointers, and load the teams by entering the following ; LOAD "TEAMS",1,1 (or ,8,1 if using disk).

4) When the teams have loaded, enter NEW and then load the main game program.

Thank you.

D A Henry Smithson
Product Manager
Audiogenic

Pascal opinion

IN THE July issue of *Commodore Horizons*, the article on programming launguages said that **Oxford Pascal** and **First Pascal** are both very good packages. I think this is misleading — Oxford Pascal is far better.

Nearly all programs when first written contain many syntax errors. With Pascal 64, if you try to comple such a program, it flags the error and stops compiling. You then have to reload the program, correct the error, save the program, reload the compiler from disk and recompile. It then flags the next error, and you have to go through the whole process again, possibly many times. On the other hand, with Oxford Pascal all syntax errors are flagged when the program is compiled for the first time...you can then reload the program and correct all of them in one go...also the resident compiler makes this process much easier.

Oxford Pascal is brilliant...once you have used it you may never use anything else again.

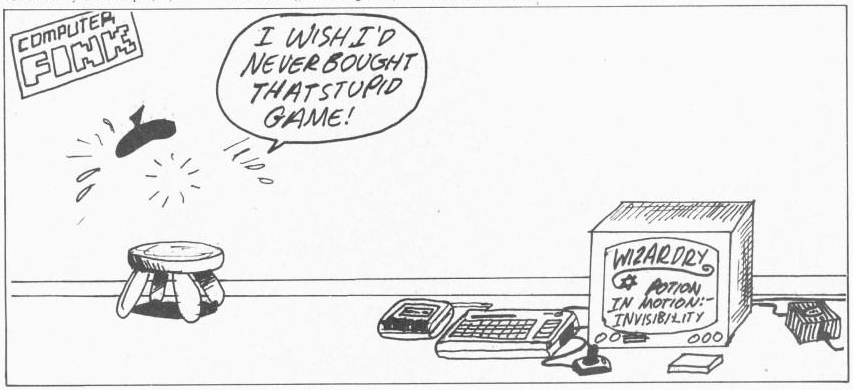
J B R White
Leicester

Overseas contest

I AM a committed *Commodore Horizons* reader, but I have a problem. Your magazine is very slow getting to Western Australia; it is now October, and I have just received an August issue. This means that I can't enter any competitions in the magazine because by the time I've got it the competitions are over. I hope there is a way of solving this problem

W D Birrell
W. Australia

WE'VE THOUGHT and thought, but there doesn't seem to be any solution. We can't hold competitions open for several months, since entrants and sponsors alike would get fed up waiting for the results. Overseas readers really need an airmail subscription; it's a mite expensive, but it's worth it to get your *Commodore Horizons* hot off the presses. Contact our Subs Department for details



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Go on - treat yourself to the one program that ought to accompany any 64. 128 or Plus/4 - SUPERBASE. This is unquestionable the best database management program for these machines, usable for just about any form or information processing - for hobbies or for business purposes. In the latter respect there really is no better alternative. Design your own records to suit the job in hand. Programming facility allows sophisticated interrelate information processing - and auto. Auto more if you've the requirement, to an extent simply not possible with lesser database programs. Information access and processing is faster and the program itself is generally much easier to use than others once you've got to grips with it. Excellent tutorial for beginners and advanced users alike. Very easily learnt procedures and alerts or help screens. Database size restricted only by equipment (IEEE drives usable so megabyte files are possible). There's also a pruned down, low-programmable version called SUPERBASE START (£25.00).

Tailor-make Superbase applications can be supplied to your personal or business requirements: these could cost from as little as £50.

SUPERSCRIPT - our normal price £61.95
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The outstanding new wordprocessor for the 64 which includes an extendable 30,000 spell-check facility, choose from either US or UK spellings! Has a very useful five-function calculator feature for column, row or total figure work, and represents state-of-the-art development from its natural predecessors, EasyScript and EasySpell. But much easier to use, and very much more powerful. Links with SUPERBASE for form letters, mailouts etc. Or use data from your own particular spreadsheet or database. In our opinion the best program of its type for the 64 - and we've been a few! SPECIAL OFFER: SUPERSCRIPT and SUPERBASE £125.00, PHONE FOR LATEST OFFER PRICE (+ PRICE MATCH PROMISE).

Please note that Microfirm now have the UK marketing rights for Superscript and the recommended retail price rises to £99 with immediate effect when present stocks are exhausted. SO DO BUY NOW.

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Learn to touch type at your own pace or simply brush up your technique and increase your speeds using this superb typing tutor. Easy to follow sequence of exercises. Clear progress assessment. The 64 has an excellent QWERTY keyboard that's well suited to many office applications - particularly wordprocessing. So make the most of it by learning to type correctly, in eight to ten hours of your own time, and thus gain a valuable employment skill.

PRACTICALC II -SPECIAL £68.00

PRACTICALC II is quite the best spreadsheet for the 64! 38-column entry and display, useful wordprocessing capabilities, sorts, search - the lot. CALC RESULT (+FM.DB) is an excellent alternative if you can make use of its 21 multiple page overlay facility. For those with existing experience of its use on other micros, there's MULTIPLAN (£99.00+), also available in CP/M mode on the 128. SPECIAL OFFER: PRACTICALC II with SUPERBASE £125.00. PRACTICALC with SUPERSCRIPT £120.00.

C64 - LANGUAGES/EXTENSIONS

[] Assex £8.95 :: [] Brendans BASIC £19.95 [] BC BASIC v57.50 [] C Power Package £19.95 :: FORTH (Handic)[+] £29.00 [] FORTH (Melbourne)[+] £14.95 [] LOGO (COMA) £14.95 [] Oxford Pascal £22.95 £49.95 [] Pascal 64 (Orpheus) £24.95 [] Pascal 64 (First Publishing) £24.99 [] Pilot (COMA) £14.95 [] Simons BASIC +40.00 [] Simons BASIC Extension £19.95 [] Ultrabasic £14.95 £19.95 [] Ultrabasic 64 £24.95 [] Zoom Pascal £24.95

Section spotlight: OXFORD PASCAL is a complete implementation of UNIX[] Pascal featuring standard p-code. Pascal is an extremely popular alternative to BASIC, and much favoured by educationalists for encouraging structured programming. Programmers can run up to 20 times the speed of BASIC - but typically only 1/4 that of machine. Extensions to make the most of the 64's features include BORDER, CHAIN, ENVEL, EXAMINE, FILL, WINDS, HOURS, INLINE, INW, LINE, MINUTES, OPSIN, PAPER, PEEK, PEN, PLOT, POKE, SCREEN, SECONDS, SETTIME, VDU, VOICE, VOLUME. The cassette version uses a resident compiler using 14k user RAM, it is intended as an educational tool and does not support disk I/O. The disk version leaves about 40k of text space - source programs are saved to disk and compiled disc to disk. Compiled programs load and run just like any other. Disk compilers also for 4040, 8050 and 8250 drives.

C64 - EDUCATIONAL SOFTWARE

As a BESM retailer we are well positioned to offer a full selection of educational software for the 64 (and OTHER machines incidentally which are used in schools). Ask for the adult catalogue (SAE please) for products from BESM (The British Educational Software Manufacturers, which comprises of software houses such as[] Acornsoft, Bourne, Calisto, Collins, Ebury, Griffin, Holt Mackintosh, Macmillan, Microsoft and Widgit):

[] Amazing Blue (4-8) £6.95 [] Ballooning (9-13) £9.95 [] Basic Adventure (11+) £12.50 [] Beginners BASIC (11+) £12.50 [] Beginners Language (11+) £12.50 [] Beginners BASIC (11+) £10.50 [] Beespies (5+) £6.95 [] Better Maths 1 (12-16) £8.95 £11.95 [] Better Spelling (9-14) £6.95 £11.95 [] Biology (GCE/CSE) £9.99 [] Biology Quiz (11+) £7.95 £11.95 [] Biology (GCE/CSE) £9.99 [] Career & Travels (13+) £7.95 [] Car Journey (6-12) £9.95 [] Castle Of Dreams (11+) £7.95 [] Count On Frank (5-12) £6.95 £11.95 [] Chemistry 2 (13-17+) £8.95 £11.95 [] Chemistry (GCE/CSE) £9.99 [] Computer Studies (GCE/CSE) £9.99 [] Count With Oliver (4-8) £6.95 [] Creative Sums Book 1 (Playground) £6.95 [] Eithel Tower £7.95 [] English Language (GCE/CSE) £9.95 [] Facemaker (5+) £5.99 [] First Steps With The Mr Men (4-8) £6.95 [] French (GCE/CSE) £9.99 [] French Mistress A (11+) £8.95 [] French Mistress B (11+) £8.95 [] Geography (GCE/CSE) £9.99 [] German (GCE/CSE) £9.99 [] German Master A (11+) £8.95 [] German Master B (11+) £8.95 [] Get Ready To Read (3-7+) £9.99 [] Granny Fog Number (3-7) £11.95 [] Grunebarg Linkword Language Courses £12.95 = French, German, Italian, Spanish [] Henry 1U part 1 (4+) £6.95 [] Here's Here's Watch Me Mon £7.95 [] Hi Bouncer (6-9) £5.95 [] Hide And Seek (4+) £9.99 [] History (GCE/CSE) £9.99 [] Humpty Dumpty & Jack Robin (7+) £5.99 [] Intro to BASIC 1 (old.95 [] Intro to BASIC 2 (old.95 [] Jack And The Beanstalk (5-12) £9.95 [] Junior BASIC (Home+old) £10.50 [] Junior Wordsplits (7-11) £6.95 [] Just A Mot (12+) £6.95 [] Know Your Child's IQ £6.95 [] Look & Learn (5-12) £9.95 [] Magic Sums (6+) £9.95 [] Mathematics (GCE/CSE) £9.99 [] Maths 1 (GCE/CSE) £9.99 [] Maths 2 (GCE/CSE) £9.99 [] Maths Examiner (O-level) (14+) £9.95 [] Micros & Space Adventure £12.95 [] Mr T Meets His Match (5-8) £9.95 [] Mr T Tells The Time (7+) £9.95 [] Mr T's Alphabet Games (5-8) £9.95 [] Mr T's Jungle Stories (5-8) £9.95 [] Mr T's Measuring Games (5-8) £9.95 [] Mr T's Money Box (7+) £9.95 [] Mr T's Number Games (7+) £9.95 [] Mr T's Shape Games (5+) £9.95 = Mole Invaders £9.95 :: Number Chaser (7+) £5.95 = Number Learning v2 (7+) £9.99 :: Number Builder (7+) £5.99 [] Numbers (3-8) £6.95 [] Oxford Pascal Sesame (10+) £6.95 [] Ordnance Survey A Earth (12-17) £8.95 £11.95 [] Organiser (9-14) £9.95 [] O Moore Astronomy £9.95 [] Physics (GCE/CSE) £9.99 [] Physics Quiz (11+) £7.95 £11.95 [] Physics 2 (13-17+) £8.95 £11.95 [] Physics (GCE/CSE) £9.99 [] Picture Builder £6.95 [] Punctuation Time (7+) £9.95 [] Quick Thinking (7+) £6.95 £9.95 [] Ralph Harris Picture Builder £6.95 [] Romeo & Juliet (14+) £7.95 [] Social & Economic Geography £11.95 [] Spanish Tutor A (11+) £8.95 [] Spanish Tutor B (11+) £8.95 [] Star Seeker £11.95 [] Starter Maths (5-8) £6.95 £9.95 [] Table Stars (6-8) £8.99 [] The Merchant Of Venice (14+) £7.95 [] Time Traveller (7+) £6.95 [] Time Trigger (8-14) £7.95 [] Tons Harts Art Master £4.95 [] Twelfth Night (14+) £7.95 [] The World Bank £19.95 [] Weather & Climate (12-17) £8.95 £11.95 = Winnie The Pooh ... £12.95 = Word Games With Mr Men £6.95 £12.95 [] Wordpower (11+) £6.95 = Word & Pictures (5-7) £9.95 = Words, Words, Words (5+) £5.99

Section spotlight: there's a new range of products from SCHOOL SOFTWARE - a nicely structured set of tests with, typically, multiple choice answers (see panel for age groups): BETTER MATHS 1, BETTER SPELLING, PHYSICS 1, BIOLOGY 1 and 2, CHEMISTRY 1 and 2, PHYSICAL GEOGRAPHY, MAPWORK, SOCIAL & ECONOMIC GEOGRAPHY, WEATHER & CLIMATE, ORDNANCE SURVEY & EARTH. Available on cassette £6.95 or disk £11.95[+]. A SCIENCE SOFTWARE LIBRARY comprises one of six programs above on Biology, Physics and Chemistry is available on disk and on other at £25.00. A GEOGRAPHY SOFTWARE LIBRARY is likewise available, on two disks, at £30. (Normal price for library disk sets is £51.95).

C64 - PROGRAMMING AIDS/UTILITIES

[] AQA Training Course £49.99 :: Adventure Construction Set £14.95 [] Adventure Writer £44.95 [] Assembler Development Pack (CBM) £24.95 [] Assembler Tutor (CBM) £29.95 [] Basic Extensions £14.95 £15.95 [] Blitz Compiler £47.50 [] Codewriter (prog.generator) £67.50 [] Exmon 64 £7.99 [] Fassen £14.95 [] Font Factory £9.95 [] Games Creator £12.95 [] HS-64 Prog Dev System (includes worked examples and manual) £55.00 [] Hyper Basic £14.95 [] JetPack Compiler £14.95 £15.00 [] Machine Lightning £29.95 £19.95 [] Master 64 £67.50 [] Micro Assembler +55.00 [] Mon 64 +25.00 [] Petspeed £49.00 [] Power Cartridge £44.95 £14.95 [] Programmers Utilities £14.95 [] Scope £17.95 [] The Quill £14.95 £19.95 [] Taplist 64 £11.95 £9.95 [] Victree +25.00 [] Write Lightning £9.95 £24.95 [] Zoo Ad £9.95

Section spotlight: MIKRO ASSEMBLER, a much loved and respected three-pass assembler offering unlimited labels, TIM monitor, and full screen editor. Mikro's commands include ASSEMBLE, AUTO, DELETE, DISASSEMBLE, FIND, FORMAT, NUMBER, RELOCATE and TIM. TIM commands include (D)disassemble, (G)o execute, (H)unt, (L)oad, (M)emory display, (R)egister, (S)ave, (T)ransfer and (X)it to BASIC. Pressenters LOW and ENG (Hyun Reforiano) to files: ASM, DIT and TAT (for storing labels, B-bit and text data in memory); +5 (sets execution address); DUT (for printer output).

C64 - LATEST GAMES

It is impossible to list here the range of recreational software now available for the 64 and many more releases are expected. Tru us for the latest releases - or for old favourites you may have trouble obtaining. But one rather special program you won't see at eli-cheapo prices is FLIGHT SIMULATION II (+£40.00 +£45.00 in) outstanding. Other BBC-produced recreational software available. Wargames and simulations a specialty. Advance orders taken for new releases.

COMMODORE 128

There is a treeendous amount of software available for the 128 quite apart from the vast range of 64 material which can be used in 64-mode. There is a great variety of CP/M software, including the specially rewritten software listed below which is to all intents identical with what you might be familiar with on other 8bit and 16bit computers. Introductory prices here represent discounts of about 20 percent and we will better anything you manage to find lower!). Details on all these products available (SAE please):

[] BASIC Compiler (Microsoft) £45[0 [] BASIC Interpreter (Microsoft) £34[0 [] Calcstar (Microfirm) £99 [] Cobol (Microsoft) £60[0 [] Dbase II (Ashton-Tate) £195 [] Fortran Compiler (Microsoft) £60[5 [] Gsx Graphics (Microsoft) £195 [] Mbasic (Microsoft) £34[0 [] Multiplan (Microsoft) £159 [] Payroll Package £195 [] Sage Accts £179 [] Sage Accts Plus (inc Invoicing) £695 [] Sort Facility (Microsoft) £1[9[[] Supercalc (Microsoft) £195 [] Supercalc II (Sorcim) £195 [] Supersort (MicroProse) £145 [] SuperCalc 3 (Sorcim) £12[[] SuperWriter (Sorcim) £25[[] Wordstar Pro v3.5 (MicroPro) £295 [] Wordstar Mailmerge (MicroPro) £195 [] Wordstar Spellstar (MicroPro) £145 [] Wordstar Pro + Mailmerge (MicroPro) £295 [] Wordstar Pro + Mailmerge + Spellstar + Starindex £395

Full data disk reformatting service available: please write for details.

And then what about what is an outstanding combination for business, personal or club use: SUPERBASE 128 (our normal price £85.00) and SUPERSCRIPT 128 (our normal price £75.95). Both can be used into memory together for true integration, and are usable in 40- or 80-column mode. SPECIAL PRICE FOR THE TWO: £145.00. PHONE FOR LATEST PRICE (+ PRICE MATCH PROMISE). For standalone use VIZAWRITE CLASSIC d85.00 has some extraordinary features (details available) and makes the perfect upgrade for 64 + Vizawrite fans.

From Commodore comes a pruned down version of Superbase, and Superscript without its spelling checker - each priced about £[0 or [0 less than the full version. And strongly recommend you opt for the full versions. And there's the excellent MICROCLERK (e98.00), and also MUSICMAKER (£29.95) including keyboard overlay).

COMMODORE PC and AMIGA

We are able to supply any IBM compatible software for the PC10/20 at very attractive prices. Also, there's a surprising number of recreational software including games, adventures and simulations. Our provisional list of AMIGA software numbers over fifty ideas and much of this will be available at the launch.

PLUS-4/C16 - GAMES

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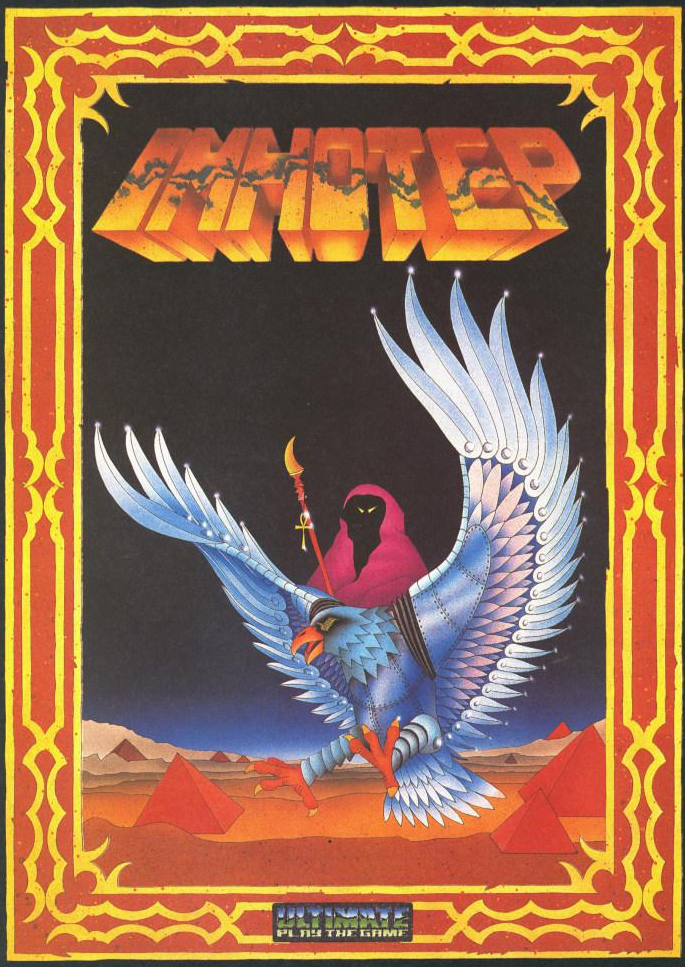

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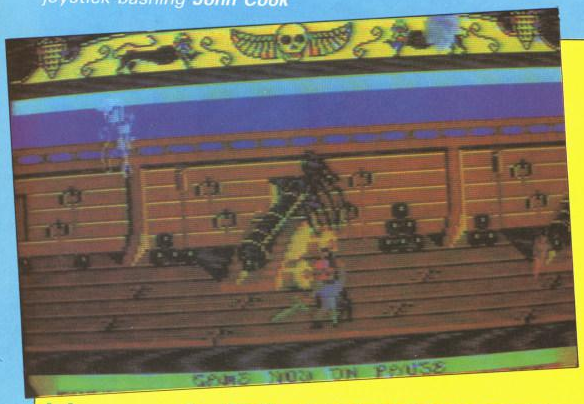
SOFT★HITS Special

This our big four — the arcade games you'll want in your stocking this Christmas — reviewed by joystick-bashing ***John Cook***



Horror in BLACKWYCHE

THE FESTIVE season fast approaches, although the observant amongst you will have noticed those tell tale signs long ago. Shopkeepers have started smiling at you as you walk in the store, the dustman have become just a little bit tidier, and the biggest giveaway of all — close relatives exclaim loudly (to no-one in particular) how life would be so much nicer if only they had new apron/action man/pair of wooly socks/ chain-saw (delete where applicable).

Just in case you haven't dropped your hints yet, this month we provide out own selection of Supersellers which can be left lying around the front room with the appropriate game heavily indicated, to ensure that *this* Christmas you get a game worth playing.

It's quite some time since **Ultimate** started beaming down Commodore software from the Planet Zanussi — **Blackwyche** being the latest release...and it's got all the usual features we've come to know and love. In true classic arcade-adventure style, there are harpies and octopus pleanty to carve up with you magic sword (once you've found it), enigmatic puzzles to solve, and Sir Arthur Pendragon bunny hopping around the haunted wreck in an attempt to free the crew from an Evil (and usually Very Fatal) Force.

Of course there are the fab graphics and sound...but most of all that compulsive 'just-one-more-go' feeling that has you coming back time and time again. How to pursuade that giant oyster to give up the pearl? And when you do...what can you do with it??? Whatever you do, don't load this one up on Christmas morning — or you'll be in mortal peril of eating a cold Christmas dinner.

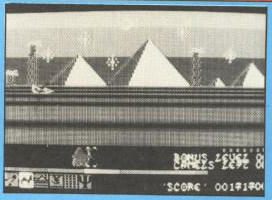
- **Micro: CBM 64**
- **Supplier: £9.95**
- **Price: £9.95**

Hot game

Madness in BATALYX

YOU MIGHT like to spend Boxing Day trying the new Minter collection — and I don't mean the latest selection of designer afghan coats; but **Batalyx.** Regular readers of **Horizons** will have closely followed its development, but for the uninitiated, Batalyx is a collection of five games (six if you include the **Psychedelia** pause mode) that will have everyone from your granny to the dog fighting to get the joystick.

Firstly there's **Hallucin-O-Bomblets,** a supreme shoot-em-up which applies Newton's First Law to your robot droid...to every action there is an equal and oppsite reaction. So you fire at the assorted sprites...and automatically move in the opposite direction. This is confusing — but fun.



Then there is **Attack of the Mutant Camels II,** which is largely self explanatory. Zap the alien cameloids against a background of space pyramids. Next, an utterly weird reaction game, **The Activation of Iridis Base,** and naturally an offering with Ancipital in the starring role, **Cippy on the Run.** In this one you run along a grey corridor, with dual gravity of course, painting it rainbow colours

Fun in WINTER GAMES

ANOTHER multi-parter that will keep the family around the telly after the Queen's Speech; **Winter Games** from those awfully nice US Gold people. There are seven events in all (although you could argue that Free Skating and Figure Skating are approximately the same), and you'll be pleased to learn that all are far from the straightforward joystick bashers we have come to know and hate. Some, like the two aforementioned, are a blend of though and timing, while the Biathlon (ski-ing and shooting) speed skating and the Bobsled will have you on the edge of your seats. Most likely, Hot Dogging and Ski JUmp will have you face down in the snow.

Once again, Epyx has produced genuinely state-of-the-art graphics and gameplay that cannot fail to be a hit for all disc users...and patient C2N owners.

- **Micro: CBM 64**
- **Supplier: US Gold**
- **Price: £12.95**

Thrills in A.C.E.

...s for Christmas

FINALLY, let us stop for one short moment and ask ourselves about the real meaning of Christmas. A time for friendship, a time for goodwill and joviality, a time for promoting a sense of true union and understanding between nations. Or if you have a copy of **A.C.E** — a time for shooting up enemy tanks, missiles, ships...anything that moves in fact! From Cascade Games, Ace cannot claim to be the most accurate simulation of modern air-to-ground warfare, but it certainly has a fair claim for being the most playable. Just enough gadgets to make it interesting, just about simple enough so you don't spend three days learning how to take off, this is a fast action shoot-em-up, with a good strategy element that will appeal to seasoned campaigners. The out-of-the-cockpit view is as speedy and smooth as I've seen on the 64, and the display of instruments below are obviously not just there for decoration. Apart from the usual skill levels, there is a two player option, with the opportunity for someone to take a back seat as a navigator/weapons man — even ejector seats. What more could your average keyboard kamikazi want?

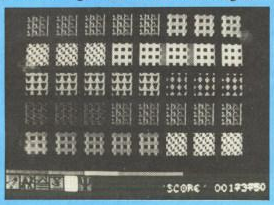
So there you are — our top tips for games to buy your Commodore this Christmas ... whatever you do, have fun...and don't forget. If you see an old man wearing a red suit carrying a white box with "C128" written on it — hands off! It's mine....please Mum? ■

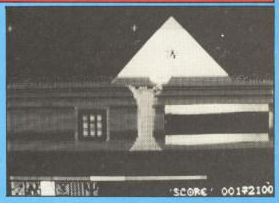
- **Micro: CBM 64**
- **Supplier: Ariolasoft**
- **Price: £9.95**

wherever you walk while you zap the spheres. Far out!

Finally, a little more relaxing, you can the play advanced version of **Syncro II** (as published in this magazine, folks) or nip into pause mode and mess around with a simplified **Psychedelia.**

Amazingly, all the games are held in memory at the same time — you can move from one to another at will — and they are all linked together with an interesting icon





score feature. With seven skill levels and infinite lives, this one's going to keep you going until New Year.

As an introduction to the Minter style, Batalyx is ideal. It should give you hours of frustrating play, and encourage you to search out other Llamasoft titles.

- **Micro: CBM 64**
- **Supplier: Cascade**
- **Price: £9.95**

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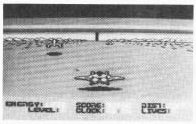
Softly Softly

Another Broderbund import from Ariola. Heads-down no-nonsense mindless blasting, this one, and no bad thing either. **Stealth** is a very inappropriate title, since all you're required to do in this game is zoom through a landscape of hostile enemies blasting the hell out of them.

The graphics, excellently designed and animated, use a perspective effect to depict enemy fighters, tanks and missiles zooming out of the distance and flashing past your fighter aircraft. As you proceed towards your target, the Dark Tower, you have to zap these enemies, while at the same time looking out for Positive Energy Fields. Flying through these enables you to refuel, but of course there are sinister negative fields too, which will drain your resources. Volcanos, radar



towers, and bunkers bar the way too.

As you come within range of the Dark Tower, the defenders become even more vicious — and destroying it in a gratifying mushroom cloud, just means that you have to face the whole thing again, but faster and harder. Top-class blasting.

Program: Stealth, 64
Supplier: Ariolasoft
Price: £9.95
Graphics: ★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

10 count

Boxing games seem to be in vogue at the moment, what with Activision's **Barry McGuigan** game, Alligata's **Knockout**, and now Elite's long-awaited **Frank Bruno's Boxing**. This is by far the most sophisticated program of the three, though that doesn't automatically make it the best.

A close copy of the arcade game **Punchout**, Elite's effort uses cartoon-style graphics which are initially quite amusing, with the eight caricatured opponents reling around the ring as you smack them mercilessly around the head.

The point of view is from behind your player (Bruno), and both fighters duck, weave and punch very smoothly. There must be hundreds of animation frames used.

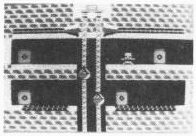
Control is by one or two joysticks, which determine whether Bruno is defending or attacking, and if so which blows are thrown — uppercut, right hook, and so on. To beat each opponent you must knock him down three times in a three-minute round.

Very cleverly programmed, but somehow unsatisfying — you feel that the computer is doing all the work, and you're more of a spectator than a participant.

Program: Frank Bruno's Boxing, 64
Supplier: Elite
Price: £7.95
Graphics: ★★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

Cop this lot

One of the zaniest efforts to come my way for some time, **Topper the Copper** features a detective who seems to consist of nothing more than a hat on legs. Bouncing through a series of chambers in search of clues to a criminal's identity, Topper must collect safes until he finds the eight clue elements. Various ghoulies, ghosties and



things that go bump bar his way, but there's no stopping him.

Accompanied by what sounds like the music from the Benny Hill Show, Topper follows the map around the caverns collecting the pieces, then must unlock the clue and make an accusation in the courtroom. All sorts of hazards bar the way, including an elevator system which threatens to dump him in a furnace, a time limit and a decreasing energy level which can only be replenished by a visit to the police station.

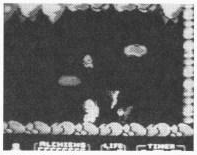
Surprisingly good fun; fast moving, whacky, and featuring a character who will surely become a legend in his own lunchtime.

Program: Topper the Copper, 64
Supplier: English Software
Price: £8.95
Graphics: ★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★★

Got the nodes?

Tharg alone knows why it's taken us so long to get a copy of this one to review — **Nodes of Yesod** has been out for some time, but it's still worth a look since it's very high-quality bit programming.

Set in the caverns of the Moon, the game features a tumbling spaceman searching for the eponymous Nodes. Collecting eight of them allows him to deactivate the sinister Monolith. To help him there are Moon Moles, which if captured can eat through the rock in some places; teleporters which take him to otherwise inaccessible places, and Gravity Sticks to help him to ascend vertical tunnels, though using them can lead to a fatally long fall. There's a wide range of baddies including fireballs, teddies on springs, horned demons, goofy fish and deadly plants. The sprites are very nice and the



animation fine — most remarkable is the speed with which the scenes change as the spaceman moves from one cavern to another.

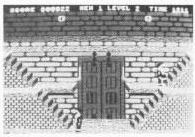
Excellent music, too — spacey and ethereal for the game, bouncy and beaty for the title screen. Well worth checking out if you like this sort of arcade adventure.

Program: Nodes of Yesod, 64
Supplier: Odin
Price: £8.95
Graphics: ★★★★★★★
Sonics: ★★★★★★★★
Gameplay: ★★★★★★★

In two minds

This isn't the kind of thing we expect to see from Quicksilva, and it's an indication on the way the company's declined since the name was swallowed up by the monolithic Argus.

Schizofrenia is played on a series of platforms and ladders — yawn — by two characters,



Alphone T. Nurd (yourself) and his scientifically-created alter ego. Your task is to tidy up the laboratory by collecting rubbish, resetting lifts and putting switches in the correct position. All the time, Alphonse's double is working to mess things up for him.

The sprites, which appear to be designed to represent Basil Fawlty, are none too brilliant, and the ragtime music is nothing if not annoying.

The backgrounds are quite well designed, but the whole concept comes over as so uninspired that it's difficult to see why anyone bothered with this one. I certainly wouldn't pay full price for it — Schizofrenia would make a decent budget game, but doesn't hold its own in the full-price market.

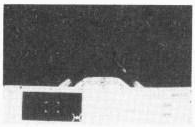
Program: Schizofrenia, 64
Supplier: Quicksilva
Price: £7.99
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Space sequel

Codename MAT 2, a mouthful to pronounce and a handful to play. Sequel to the original Spectrum game, CM2 is a cross between a space flight simulator and Star Trek, the ancient strategy game of zones and battles.

Decent graphics show you the view through the windscreen of your space fighter. Your mission is to defend a peaceful planet from attack by space raiders. To aid you, you have long and short range scanners, defensive shields, lasers and torpedoes, and warp drive. Checking your range meter, you close on Myon enemies, put your shields up, arm the torpedoes and blast away as the baddies flit through your gunsights.

The Quadrant Chart gives the status of the energy satellites which you must protect, and you have two droids which can be assigned to repair damaged systems. There are four rows of satellites to protect; should all four be broken by the attackers, power will cease to flow to the planet and it's the big sleep for



the inhabitants, and you get demoted. You have to think about which rows to repair to keep the power flowing as long as possible; satellites can be moved from one row to another using the cursor controls.

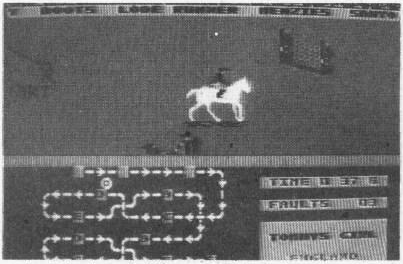
Good fun; not remarkable graphically, since we've all seen this kind of thing done many times before, but full of entertaining little details and imbued with a convincing atmosphere.

Program: Codename MAT 2, 64
Supplier: Domark
Price: £9.95
Graphics:
Sonics:
Gameplay:

Salute to Harvey

You should know my tastes; coruscating beams of energy, gigantic explosions, mindless violence, the rattle of gunfire and the crunch of snapping bones. So why do I like this non-violent, jolly little family game so much?

The top half of the screen shows you the Hickstead showjumping arena, with twelve different courses including many different types of jump and obstacle available. The horse, the speed and direction of which is controlled by the joystick, is well animated, and gallops around the course with the figure of Harvey bouncing on its back. Pressing the fire button makes it jump, and



precise timing is required if you are to avoid knocking over a fence, taking a fall or refusing. The jumping course is shown on a map on the lower half of the screen, which also gives you the time and number of faults. The horse responds very realistically; you can't just change direction immediately, you have to coax it around.

Up to six can play, and there's also a facility to design your own course. Accompanied by the Post Horn Gallop, brightly coloured and challenging, Harvey Smith Showjumper is the nicest game I've seen for some time, and should go down well with all sorts of games players (not just girlies). And two fingers to anyone who says otherwise.

Program: Harvey Smith Showjumper, 64
Supplier: Software Projects
Price: £7.95
Graphics: ★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★★

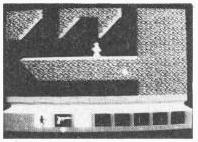
Caveman

This is an agreeable arcade adventure licensed from Ozisoft.

Your task is to locate eleven hidden treasures in a complex of underground caverns. You can pick up objects as you find them, and you will need many of them (notably a gun) to overcome the perils of the caves, which include vampire bats, gas, rushing rivers and dragons.

You must free your hands by moving the "object" cursor, shown below the main screen, to position 1; or you'll take a tumble when you try to climb.

There are two help screens,



one giving control instructions and the other an inventory.

Unremarkable graphically, but good fun to play.

Program: Journey, 64
Supplier: CRL
Price: £7.95
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★

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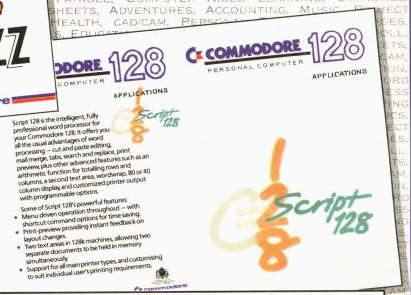
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* Note due to memory limitations ACE on the C16 and VIC20 (+8K Ram) do not have any ground objects.

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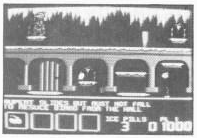
Son of Rupert

Sequel to **Rupert and the Toymaker's Party**, **Rupert and the Ice Palace** is the same blend of savage action, death-defying skill and heart-stopping excitement as the previous effort. No, only kidding — in fact it's more of the same kids' stuff.

The cleverly-animated figure of Rupert the Bear, guided by rhyming clues, must free his frozen friends from the palace of Jack and Jenny Frost. Protected from the cold by his Ice Pills, he negotiates the slippery stairways, skids along the slides and avoids the falling icicles and shooting snowballs in his quest. Once his friends are rescued, their missing winter woolies must be retrieved before



the return to Nutwood.

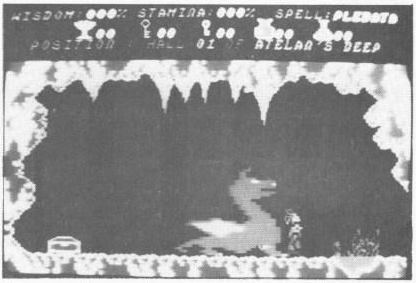
Pretty simple to play, and all jolly good fun for anyone of nursery age, though as Roald Dahl said, I'm sure kiddies are fed up with "cotton woolies" and prefer a good healthy dose of violence and horror. Coming next; "**Rupert Meets Rambo**"?

Program: Rupert and the Ice Palace, 64
Supplier: Quicksilva
Price: £7.99
Graphics: ★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Jolly wizard

An excellent little cheapie from Rabbit, a name from the past now resurrected by Virgin as a budget label. Written by Interceptor mainstays Lee Braine and Ian Grey, **Doriath** has overtones of **Sorcery**, **Staff of Karnath**, and any number of similar arcade adventures.

You control a wizard searching through a series of caverns for eight scroll fragments and 100% wisdom. Having done this you can achieve immortality, but it's not



that easy. The magic spells you'll need to defeat various monsters are hidden in chests, and you must find out which spell to use on which enemy.

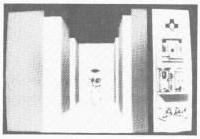
There are hidden keys for portcullises and trapdoors, stamina potions, and secret potions the use of which you'll have to discover. It's a true combination of arcade skills — avoiding guards and hazards — and adventure strategies and mapping. Although the graphics are nothing to write home about, they serve. Certainly "aardvark of the month" as far as budget labels are concerned, though not in the **Blackwyche** league.

Program: Doriath, 64
Supplier: Rabbit/Virgin
Price: £3.50
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★

Heavy breathing

At first sight this is a variation on the old "3-D maze" theme, but there's a lot more to it than that. Written by the Hungarian Andromeda team, **Scarabaeus** has lots of spooky atmosphere.

You explore the 3-D maze, which scrolls very smoothly, in search of nine ghosties. By pulling back on the joystick you



can access the maze map, which shows your relative positions. Once you trap and capture a ghost, you gain an amulet piece. Getting nine allows you to leave the maze and enter the next section through a hand-cranked elevator.

Each successive level contains more hazards, such as spiders and booby traps. The music, or if you wish spooky breathing sound effects, add lots of appropriate atmosphere.

Having won through on each level, you must solve the secret of the maze by matching your amulets against those on the tomb wall, in a form of sliding-block puzzle.

Very well done, with excellent graphics, though a little too repetitive for my taste.

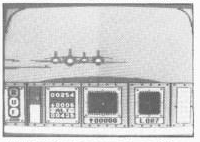
Program: Scarabaeus, 64
Supplier: Ariolasoft
Price: £9.95
Graphics: ★★★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★

Putting on a display

An interesting twist on the theme of flight simulators, **Red Arrows** gives you the chance to join the crack aerobatic display team and refine your precision flying skills.

Complete with a booklet giving the history of aerobatics and the Red Arrows, the game presents you with a fair amount of information to assimilate — brakes, flaps, wheels, thrust, speed, vertical speed, altitude, formation radar, bank, roll, messages, and so on. All this appears on the control panel in the lower half of the screen.

Above, you see the leader plane and the others in the formation. Juggling your speed and orientation, using keyboard or joystick control, you must go through a manoeuvre or whole display, with points being awarded for your success in



staying in the correct position. It's not a simple case of follow-the-leader; all kinds of tricks have to be mastered if you hope to put on a good show.

An excellent idea, though the graphics and sound are no more than passable, and there's always the urge to hit your non-existent fire button when you see planes in your sights!

Program: Red Arrows, 64
Supplier: Database
Price: £7.95
Graphics: ★★★★★★
Sonics: ★★★★
Gameplay: ★★★★★★

US Gold greats

US GOLD plans to release a compilation cassette of five chart-topping games. **The Arcade Hall of Fame** will be the company's first compilation, and will sell for £9.95. There is also a disk version planned at £12.95.

Titles included will be **Spy Hunter, Tapper, Up 'n' Down, Blue Max** and **Aztec Challenge.** The Arcade Hall of Fame will be available from November 8th. Conatact US Gold at Unit 10, The Parkway Industrial Centre, Heneage Street, Birmingham, 021-359 3020.

CBM loss — Amiga hope

COMMODORE International has announced losses of $114 million for the fiscal year ending June 30th 1985. The figures stand in stark contrast to last year's profit of $144 million. Though Commodore International does not publish separate figures for each country, it seems likely that the UK operation has made a loss. Worldwide, sales were down by 56% in the last quarter.

President Irving Gould blamed the figures on the downturn in the US computer market, a $63 million inventory write-down, and "one-time charges" of $14 million. Commodore UK's hope now is that the C128 and the forthcoming Amiga, backed by attractive packaging deals and heavy advertising, will turn the tide for the company in the next financial year.

Signs for the Amiga are good; demand from software development houses has been such that Commodore has made available American systems while the UK version is being finalised. At a cost of £1700, developers will be able to obtain the central unit, extra disk drive, monitor, manuals, and a full range of software development tools. Commodore's Chris Kaday was quick to point out that "the price for the development system does not reflect the intended retail price" — which is now expected to be around £1,500.

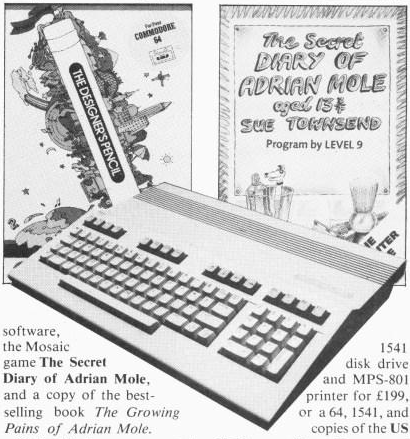
C128 pack plans

COMMODORE's marketing plans for the C128 are now almost finalised. The machine is to be sold at £449.99 packaged with a 1570 disk drive.

The 1570 is a cheaper version of the double-headed 1571 which was thought to be too expensive for the market at £299. The 1570 is a single-headed 0.5 Mb device designed specifically for the C128 but fully compatible with all other CBM computers. Equipped with a built-in 6502 microprocessor, the 1570 has 2K RAM, 32K ROM and integral DOS. On the C128, data transfer rates are 300cps in 64 mode, up to 5200 cps in 128 mode and 5200 cps in CP/M mode. Formatted storage capacity is 340K, and in CP/M mode the 1570 is read/write compatible with KayPro, Osborne, and some IBM formats.

Commodore's Chris Kaday explained that the move was intended to encourage the C128 to be used in 128 and CP/M mode; "in order to get the best out of the 128 and run CP/M effectively, an industry standard 5¼ disk drive is needed, so we have decided to subsidise part of the cost involved."

Meanwhile the 64 is to be sold as part of a Christmas Compendium pack at £199, with a 1530 datasette, **Music Maker** software package, Activision **Designer's Pencil** graphics software, the Mosaic game **The Secret Diary of Adrian Mole**, and a copy of the best-selling book *The Growing Pains of Adrian Mole.*



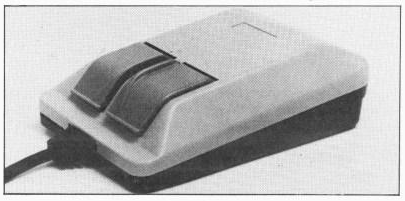
Chris Kaday commented "It's our belief that home computers still sold in 'splendid isolation' are doomed from the outset. When people open their pesents at Chrismas they expect to have everything they need to use them straight away." Two other value added packs are also to be launched next month; a 1541 disk drive and MPS-801 printer for £199, or a 64, 1541, and copies of the **US Gold** games **Super Zaxxon** and **Exodus — Ultimate 3**, for £299. Contact Commodore at 1 Hunter's Way, Weldon North Industrial Estate, Corby, Northants, 0356-205555.

More on mice

FOLLOWING last month's review of the Datex Mouse for the 64, news now emerges of a rival. Wigmore House has launched the MS2000 device, an optical mouse promising measurement to a resolution of 100 points to the inch.

The rubber-coated ball is designed to offer smooth operation without slipping. Offered with the mouse is a graphics software package including freehand drawing, lines, rubber banding, circles, elipses, boxes, fill, colour, pattern spray, undo, zoom, copy, rotate, mirror, and a whole range of other commands.

Results can be printed out on the MPS-802 or MPS-803 printer. The software is cassette based. The MS-2000 costs £69.90 from Wigmore, 32 Savile Row, London, W1X 1AG, 01-734 0171/2/3. We hope to review the MS-2000 soon.



64's fixed fast

TRILOGIC of Bradford has announced a new repair service for 64's with a standard charge. For £27.50, including parts, labour and return postage, your ailing 64 will be repaired with five day turnaround. For £34.50, the company offers same day repair and despatch, subject to availability of spares.

All repairs are guaranteed for three months, and if you require more details you can get a free catalogue from Trilogic in return for a 17p stamp. Contact Trilogic, 29 Holme Lane, Bradford, BD4 0QA, 0274-684289.

BT buys Beyond

BRITISH TELECOM has bought top software house **Beyond**. The company, formerly owned by EMAP, will now be part of BT's New Information Services section. Plans for Beyond's Christmas releases, including the **Superman** game, should not be affected. There are currently twelve titles due for release, five at Christmas. All production and financial staff from Beyond will be joining BT.

There are no plans to join Beyond to the **Firebird** label; Beyond and Monolith titles will continue to be marketed autonomously. For the moment Beyond will remain at EMAP, until a move to BT's Covent Garden facility is organised.

Meanwhile BT's Firebird lable has announced a new "Hot Range", to complex to be included in the Silver range but not right for the Gold series. Titles for the 64 will include **Rasputin, Gerry the Germ, Costa Capers** and **Runestone.** Silver range has been cut in price from £2.50 to £1.99, though another important project, the converstions of Ultimate's **Sabre Wulf** and **Underwurlde**, has been delayed due to problems with the protection routines.

Contact Firebird at Wellington House, Upper St Martin's Lane, Covent Garden, London WC2.

Remember Elephant

DENNISON's Elephant floppy disks are being promoted by special free offers from dealers. A range of eye-catching gifts, including T-shirts, nylon sportsbags, and baseball-style caps, all displaying Dennison's famous elephant logo, is available in return for box tops from Elephant disk 10-packs.

Just find a dealer displaying the Elephant logo, buy your disks and fill in an application form, and Dennison will mail you the goodies. For more details contact Dennison Manufacturing Co Ltd, Colonial Way, Watford, Herts, WD2 4JY, 0923-41244.

Rabbit hops back

IT'S NOT often that photos of managing directors of software companies are interesting enough to merit publication in the exciting, soaraway Horizons news section. But then, it's not often that these gentlemen are dressed as bunny rabbits.

Celebrating the re-emergence of the **Rabbit** name as a budget software label operated by **Virgin**, Nick Alexamder (black bunny) and the rest of the Virgin staff went for a hop in the park. In a rare moment of seriousness, Nick commented "The software market is really buoyant again after a year in the doldrums, so we feel that this is the time to lauch our Rabbit label." Under the by-line "better than budget", Rabbit will be marketing quality games at £3.99. The first titles fro the CBM 64 are **Zyto**, a multi-screen arcade game set in a series of caverns, and **Doriath**, an arcade adventure featuring a wily magician (reviewed this issue).

Contact Virgin at 2-4 Vernon yard, 119 Portobello Road, London W11, 01-727 8070 for more rabitting on.

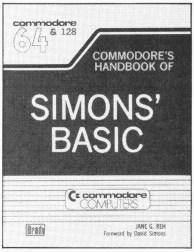
Ultimate in Egypt

THE LATEST 64 game from Ultimate, **Imhotep**, will be released soon. Following closely on the heels of **Blackwyche**, Imhotep is set in ancient Egypt, and features the eponymous hero in a task set by the Gods. The game will be packaged, like Blackwyche, in the new double-size cassette cases, and will cost £9.95.

The game will be reviewed in the January issue — meanwhile, contact Ultimate at The Green, Ashby-de-la-Zouch, Leicestershire, LE6 5JU.

Simple Simon

USERS of Commodore's **Simons' Basic** package will be pleased to see a book dedicated to the subject published by Prentice/Hall International. *Commodore's Handbook of Simons' Basic*, by jane Reh, costs £11.80. It includes a



foreword by David Simons, and consists of nine sections, including material on programming aids, I/O routines, data handling, low and hi-res graphics, sound, and peripheral control with Simons' Basic.

All 144 commands are listed and described in an appendix, and there is a full index.

Contact Prentice/Hall, 66 Wood Lane End, Hemel Hempstead, Herts.

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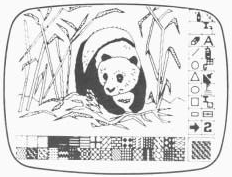

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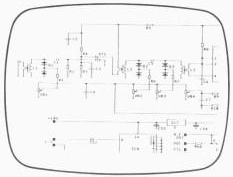

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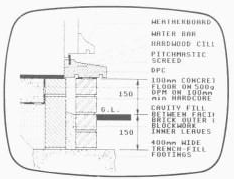

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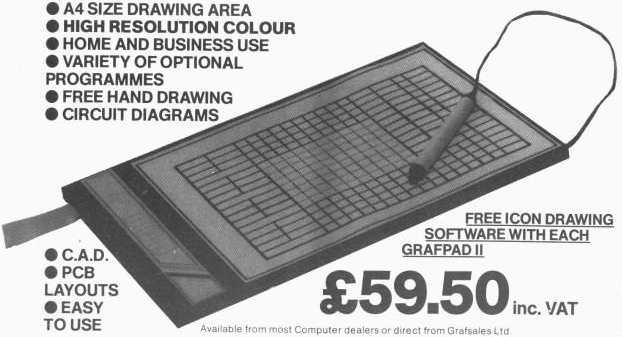

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CH1

MINTER MANIA

Back from his hols, The Hairy One ruminates on new technology, sets the record straight on Ariolasoft, and ponders on the nature of hipness

I'M NOW back after a really zarjaz 2-week holiday in Corfu. Didn't see a single '64 the whole time I was out there, just lay there being on the beach and exposing my body to a nuclear fusion furnace 93 million miles away in order to darken my epidermis. And I feel lots better for it, but it does mean that I've been away from the '64 scene for a while. Mind you, I didn't abstain totally from video games, there was Satan of Saturn (bet no-one's ever heard of that one!) at which I became fairly adept. The game itself is really primitive by today's standards, but was quite blastable nonetheless....

Since being back, I've been taking a holiday from Commodore work to do the Colourspace for the Atari 520. Using the 520 makes me realise that home computers are going to make a significant leap in power very shortly. The C64 represented the last big advance when it was launched at the end of '82: even at £400 it seemed amazing when compared to the VIC-20s and ZX81s of the day. That price of £400 soon came down to affordable levels and the '64 came to be the most popular games micro about.

The same thing will happen to the likes of the Atari 520. Although very much a luxury micro now, I'm sure that in a year it could be selling to the same sort of people who bought those first '64s, and for the same sort of prices. Hopefully the same thing will happen using the same chip set...

Your machine of a couple of year's time will probably be based on the 68000 and have more memory than a single programmer could decently fill. You'll be able to forget 16 colours, multicolour mode and screen attributes; you'll have a choice of thousands of hues at very high resolution. You'll probably be able to buy a Defender program better than the arcade original. Forget tape drives, too: they'll vanish and become just as bad memory, replaced by smart, efficient and cheap 3.5 inch drives. And the software available will be absolutely amazing.

I have seen the future — and the future is ZARJAZ!!

Ah well, back off me hols now, it's getting colder and it'll soon be time to spend the long dark evenings sitting indoors and getting into a spot of heavy zapping. Winter is always the best time for games companies — in the summer everyone stays out rather than stay in for a game session, and the only games that do well are the sports ones, and then only if the Olympics are on too (just look at all the Decathlons we had last summer!).

Speaking of sport sims and winter, I still reckon that my idea for a ski-ing game is worthy of mention. I first described this in my newsletter a while back, but I'll go through it again for the benefit of anyone out there who might fancy a go at home but can't think what to do...

Boring

Most ski-ing games are quite boring, being just rush-down-as-fast-as-poss-not-missing-any-gates jobs. Boring, boring, boring. My ideal ski-ing game would involve hammering down the slope at insane velocities, to the accompaniment of a good rock soundtrack (to simulate ski-ing wearing a Walkman), attempting to wipe out individual skiers, knock people off ski tows and generally create mayhem for bonus points. You could get especially large bonuses for wiping out entire ski schools and for not hitting mountain goats. You could have other skiers after you trying to take you out... I really like the idea of a game like this, and it'd be well suited to the '64 with its sprites and smooth scroll.

I'm getting fed up at the moment with a lot of rumours flying about that I've sold my soul to Ariolasoft and that they've 'got' Llamasoft. In fact I **have** arranged for **one** game to be marketed by Ariola — but still under my label — but that's all at the moment. My main work is for Llamasoft alone, preparing the light synthesiser for the 16-bit machines, and getting together my next '64 design. Worry not, the Beast is not about to sell out...

I haven't had much chance to play this month, having been away for a while; but I couldn't help but notice all the strange happenings concerning Alligata's Who Dares Wins, a game I am not averse to myself. Jolly good blast.

Apparently, as soon as the game came out, Elite hassled Alligata because the game was a copy of the arcade game Commando, to which Elite have the rights. However it seems

Elite were impressed by the game and are going to use the same programmer to create their own version (which I presume will be released as Commando). Meanwhile Alligata, in one of the fastest moves I've yet seen in the industry, change the graphics and gameplay of WDW sufficiently to avoid getting busted by Elite, and then release it as Who Dares Wins II...

Shoot-'em-up

I do believe the shoot 'em up is coming back into fashion a bit, after having been displaced by arcade-adventures and ladders-and-ramps (which are now thoroughly unhip, and about time too). Most popular at the moment seem to be icon-driven stuff in the Denton Designs mode. DD themselves have a couple of nice ones out there and I know of more in development. Software speech is considerably less hip than it was a couple of months ago. Construction sets are 'in', too.

I must finish now, it's late and I'm knackered after a heavy Compunet session. Hopefully I should have more news next month; the Commodore Horizons show will have been and I'll be a bit more in touch with the scene. Hopefully I should have Amiga and a copy of Mercenary by then (both of which I'm dying to get hold of)!

—YAK on the beach in a cloud of pixels (4096) ■

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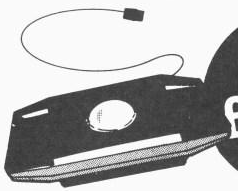

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Data compiled by Gallup from a panel of specialist and chain stores, for the month ending September 7th.

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To put the Triton Quick Drive through its paces we used an ordinary computer game – Jet Set Willy.

From tape it took 170 seconds to load.

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impressed by the Quick Disk. Not only is it very quick, and both smaller and neater than other drives, but it's easier to use as well...the Quick Drive performed faultlessly.

It's easy to use and at around £120 is probably the best buy for the first time user."

High praise indeed for any disk drive.

For one costing £80 less than any comparable piece of equipment it's exceptional.

Proof indeed that the Triton has all the capabilities of its more expensive rivals.

AS TEST DRIVEN BY THE EXPERTS.

New it may be, but the Triton Quick Disk is already receiving rave reviews in the computer press. For example, in a recent Home Computing Weekly article it picked up their much coveted "Flipped" award.

As their journalist said ".... I am very

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★★★ALL★★★ AMERICAN ADVENTU

***Ken Matthews** looks at the latest craze to cross the Atlantic — US Gold's disk-based graphic adventure programs*

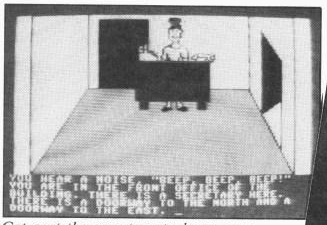
US GOLD put a shot into the arm of the UK software market a couple of years ago — by simply introducing top US titles, in a repackaged form, at about a third of the price of the direct imports!

Since then their titles have rarely been out of the charts, and at last they have turned their attention to adventures...

The first of the Sierra On-Line titles, **Wizard and Princess** has already been reviewed in these pages and is due to be followed by two more, **Mission Asteroid** and **Ulysses and the Golden Fleece.**

Mission Asteroid is the first and the easiest of the titles. You are cast as a space cadet with the chance to be a hero. A huge asteroid is on a collision course with Earth and you have just seven hours to steer your ship to intercept and destroy this deadly threat. You will begin your journey at mission control and must gather the equipment and training to fly the ship and successfully save the Earth.

In common with all the Sierra On-Line games, these two are graphic adventures using a two word command structure. The graphics are very colourful, if a little juvenile and unimaginative. If you've played adventures like Level 9 and Infocom you might find it a little difficult to 'play down' to commands like "GO DOOR" and "TALK SECRETARY" and the limited vocabulary will mean a struggle for the right



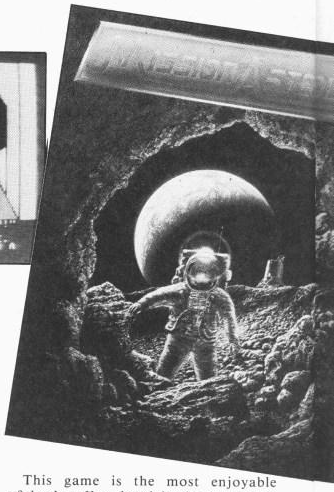
Get past the secretary to learn your task in Mission Asteroid

words but persistence usually pays off.

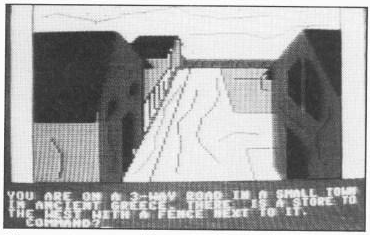
Ulysses and the Golden Fleece is a much finer and larger game despite the mythological mismatch of the title!

You are the legendary Ulysses charged by the King to return the Golden Fleece to Greece. You must search the land around you for clues and equipment before passing to the docks and recruiting a crew of stalwarts for the trails ahead.

You and your crew will encounter many of the hazards and perils that Ulysses faced, meeting friend and foe to recover the various items and magical words to enable you to complete your quest. Harpies, sirens and the dreaded cyclops will thwart you if they can. Even the gods may take a hand!



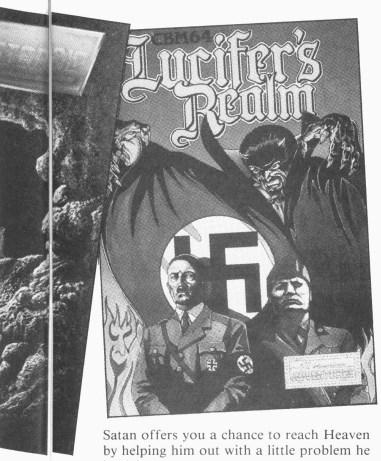
This game is the most enjoyable of the three I've played despite the struggle to find the exact phrasing to pass some obstacles. It is large enough, and the problems logical enough to provide many hours of frustrating fun — if that's not too much of a contradiction.



Ulysses sets out on his quest for the fleece

Another new title that I've only just received hails from American Eagle software via US Gold and is called **Lucifer's Realm.** It is written by Jymm Pearson, who some of you might recognise as being responsible for three of Adventure International's most difficult games, **'Escape from Traam', The Curse of Crowley Manor'** and **'San Francisco Earthqqake 1906'.**

The theme of the game is as original as the author's spelling of his name! It seems that you have died and been wrongly consigned to the fires of Heil. Remarkable though,



Satan offers you a chance to reach Heaven by helping him out with a little problem he is facing...

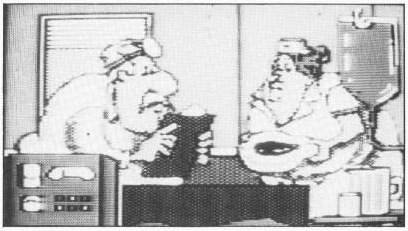
Characters representing the epitome of evil like Hitler and Mussolini have settled in to the Underworld and are not plotting the overthrow of Satan to rule there for eternity — all you need to do for your heavenly reward is stop them. At least you have an eternity to figure out how!

Although the game uses the old two words system again, a partial vocabulary is provided in the instructions, allowing you to spend more time on the real problems of the game rather than Roget's Thesaurus!! The previous games would benefit greatly by the inclusion of some of the more outre phrases in the support literature.

The graphics are of a very high quality and do add to the atmosphre of the game. I've barely scratched the surface in finding a dozen or so locations — though that was hard enough. Still, I'm sure I'm in for much more brain teasing and late nights before I crack this one and I'd be happy to recommend it on its original plot and tricky problems.

To round off, I'd like to mention a Sierra title that's been around a while now — **Ultima III.** The game perhaps falls more in the lines of action adventure and, as the title suggests, is the third in a series of such games. The idea of the series is to take an adventurer on a journey in time and space to gain experience and defeat evil wizards and their protoges.

Until US Gold release the first two Ultimas you'll need to find an exorbitant £40-£50 to play them but it's not necessary to complete them to play Ultima III.



On your deathbed, the adventure begins . . .

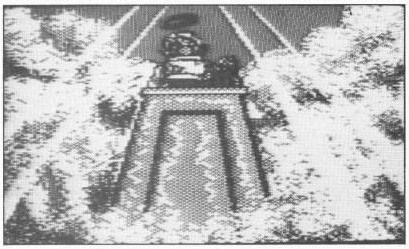
The play system is as close to Dungeons and Dragons as I've seen on a computer and allows the player(s) to select a single adventurer or a group to enter the arena. The familiar professions of fighter, thief, wizard and cleric are all available. The map of Ultima covers a whole world with towns, cities and ports where you can rest, improve your skills and equipment and uncover the important clues leading to your Ultimate goal.

If the idea appeals to you I'm happy to recommend Ultima, with the reservation that some of the voluminous manuals provided with the original American version are missing from the US Gold copy!

US Gold's strategy is a good one — producing high quality software at excellent prices. There are still many first class titles yet to be brought over and with enough support from we adventurers, we could have many treats yet to come! ■

TURES

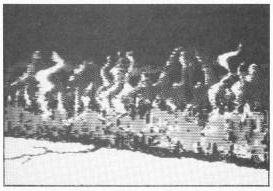
GAMES:	MICRO:	PRICE:
Mission Asteroid	64	£14.95
Ulysses and the Golden Fleece	64	£14.95
Lucifer's Realm	64	£14.95
Ultima III	64	£14.95



Don't take a wrong turn at Heaven's Gate . . .

U.S. GOLD All American Software

All American ADVENTURES



Your journey into Hell starts on a rocky ledge

Will you escape Lucifer's Realm, or survive the Exodus?

A Flash Of Genius!

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Plug in and play

Adding rhythms, chords and arpeggios to the sounds of the SID chip, the Sound Buggy turns the 64 into a powerful playalong instrument. ***Ian Waugh*** *takes a ride . . .*

AFTER USING some of the many excellent music software packages on the market, there may come time when you feel you would like to get down to something a little more serious, yet you may not want to invest in equipment which requires a PhD to operate. Siel have been thinking of you. Their **Sound Buggy** offers a painless introduction to computerised music making.

The Buggy is housed in a neat Siel grey box and is compatible with the 64, SX and 128 computers with software available on disk or cassette. A phono and a mini jack socket provide outputs to your hi fi or headphones. Upon booting the system you are asked to choose in which language you want the Help messages to appear; English, French, German or Italian. You can then go into demo mode or select the keyboard you want to use. Siel's mini clip-on keyboard, similar to Commodore's mini keyboard, is supplied with the Buggy. You can use either of these, Siel's full-size CMK 49 keyboard or a similar plug-in keyboard.

Synthesiser

Having sorted that out, you are presented with the Main Menu page which lists five options: End of job, MIDI functions, Play, Disc Operations and Song Menu. Movement around each of these sub menus is with the function keys, and pressing the CMD key causes a help message to pop up at the top of the screen. My Buggy was one of the first in the UK and the instruction books had not yet been printed. It says a lot for the program design that I was able to use all its features without any instructions — and without any problems.

So what does the Buggy do? First of all, it contains its own sound synthesiser making it independant of the computer's internal sound chip. The software allows you to program a drum rhythm, design a solo sound, play and record the melody line of a song and play and arrange an accompaniment for it. We'll look quickly at each menu option in turn.

The Song Menu displays the songs stored in memory and nine songs are already installed ranging from sambas and disco numbers to Glen Miller.

Selecting a song puts you into the SONG-EDIT screen which is the main display. Play also sends you to this screen. It is divided into five sections. The top line shows the song number and name and underneath are four windows which show what's going on inside the program. The upper left window displays the solo sound parameters, the upper right window shows the selected accompaniment pattern, the lower left shows the rhythm name, number and tempo and the lower right is the sequencer window showing what you are playing and recording.

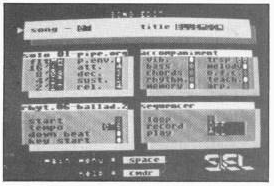
An instrument is constructed in the top left window from four footage settings: 16', 8', 4' and 2', rather like footage stops on an organ, which can be set from 0 to 31. ADSR (Attack, Decay, Sustain, Release) parameters can be varied through eight settings. 14 solo

sounds are already in the program (piano, harpsichord, cello, etc.) and a total of 28 can be stored.

The accompaniment section has the following options: vibrato, base, chords, rhythm, memory, transpose, melody, one finger chord, teach and arpeggio. All but transposes are on/off functions. The base and chord accompaniment are recorded together when you record the chord part (which we'll come to in a moment) but here they can be individually selected for output. Rhythm plays the bass and chord parts in a clever rhythmic fashion. Melody is similar to the ADC (Automatic Organ Computer) feature of Lowery organs which plays a complete chord whenever a single melody note plays. o.f.c. allows you to play one finger chords from the lower half of the QWERTY keyboard, and teach lets you form your own chords.

The rhythm section can store 24 rhythms, and 14 examples are already programmed including rock, disco, funky, samba, tango, march, beguine and swing beats. The drums are programmed from a separate screen which shows five drum sounds: bass, snare, rim shot and two cymbals. Patterns are built up across a matrix of dots which are turned on (red) or off (red) by pressing a key so you can see and hear the drum patterns very easily. There's something about rhythm units which bring out the drummer in people and this section alone kept me ausied for hours.

The final window is the sequencer section.



This is used to select the parts you want to play and record: solo or chords. A loop option will play continuously.

The Disk Operations menu lets you load and save the songs either individually or all together. You can erase unwanted files, catalogue the disc and format a new one — very useful indeed if you don't have a spare disk on which to save your latest tune.

The final option, the MIDI menu, is a stepping stone to the world of interfacing. To use this section you also need a suitable MIDI interface, such as Siel's at £99, and a keyboard with MIDI sockets which, once plugged in, can be used to control the Buggy. The four music sections of the Buggy; solo, chords, bass and arpeggio, can be given different channel and program numbers so you can play back the compositions through four separate MIDI keyboards. This has to be heard to be believed. For those of us with only one keyboard, however, it will paly back all on one voice and if you have a multi-timbral instrument such as Casio's CZ-100 or CZ-1000 you can assign a different voice to each part.

The Sound Buggy is easy to use, it's fun, it sounds good and it serves as an introduction to the joys, delights — and problems (eg synchronising the two parts) — of recording. If you've outgrown the SID chip this could be your next step. Take the buggy for a ride. ■

THE SOUND BUGGY has a RRP of £99 inc VAT. Contact: Siel (UK) Ltd., Ahed Depot, Reigate Road, Hookwood, Horley, Surrey RH6 0AY. Tel: 0293 776153/4.

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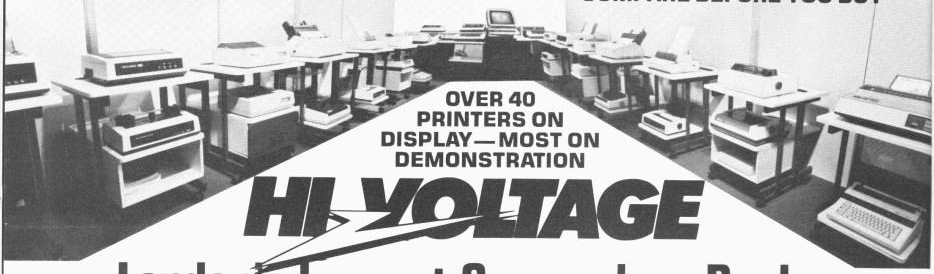

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Adventurous Ariolasoft

Ken Matthews discovers the joys of DIY adventures, and enters the murky world of computer hacking with Activision's latest

UNLESS you've just returned from Alpha Centauri you'll have at least have heard of the US software house **Electronic Arts** whose titles have started appearing over here under the **Ariolasoft** banner.

To me at least, titles like **M.U.L.E, Archon** and their excellent construction sets represent some of the finest programming techniques.

New to the Electronic Arts team is Stuart

Smith whose Dungeons and Dragons style action adventures, **Ali Baba** and **Return of Heracles** have been delighting our yankee cousins for some time. These games are disk-based epics that allow the player(s) to select a hero(ine) from a cast of dozens and set out on an orgy of treasure-grabbing, monster-slaying mayhem in search of fame, fortune and even immortality! All that, mixed with some tricky puzzles and witty messages make extremely playable adventures. At last, Stuart has decided to reveal some of his secrets and let us try and match his skill using the brilliant **Adventure Construction Set!**

I could take up most of the mag raving about this power-packed programme — almost every feature you could imagine is covered in the 44 page manual — but I'll stick to the bare bones for now.

The utility features three basic sets that allow you to create Fantasy, Mystery or Science Fiction adventures.

Once you decide which sort of game you prefer, the amount of work you need to put in is enteriely up to you. You have the choice of planning the whole thing down to the last detail or letting the programme take over at any point.

The game you construct may contain up to 240 locations which can be devided into 'regions' of as many as 16 rooms each. The minds begins to boggle at the thought of trying to take you through the dozens and dozens of options so suffice it to say that you have sixteen terrain effects and up to 8 creatures among the 3000 'props' that can be put in a region — if you can't find one that's just right you can even modify existing shapes or design you own!

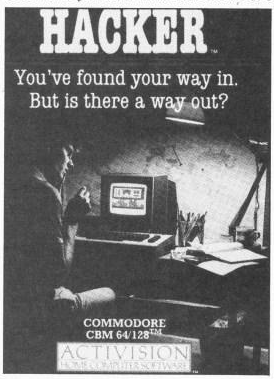
The background you have designed can now be populated with other characters. Once again it is up to you to pick their behaviour and the possessions they may have. Magic can be made avialable and up to 335 messages can be used to add to the final touch.

I am sure it would take a long time to get to grips with the full potential of this system, which makes the option of allowing the computer to 'take over' at almost any pat of the design process a masterly touch. If you are getting a bit out of your depth or just frustrated, let the CPU get on with it and go get a cup of tea!

The basics are covered by no fewer than seven mini adventures which introduce the principles of the programme in easy stages.

Finally, just to show you what can be done, a full-blown adventure, **Rivers of Light** is included. This excellent game alone is worth the price of the whole package and it can be dissected using the Editor utility to give 'worked examples' of how the available techniques can be used.

The Adventure Construction Set is a masterpiece deserving of the highest accolades. The owner of this package can look forward to years of entertainment at a price so low that you must make sure there's one in your Christmas stocking.



Addicts would have us believe that one of the main pleasures of hacking is that you never know quite what you've gotten yourself into or, as in the film **Wargames**, how to get out of it! **Activision** use this idea as the basis of their new game **Hacker.** Just like the late night modem masters you have no book or manual to work or — you are on your own.

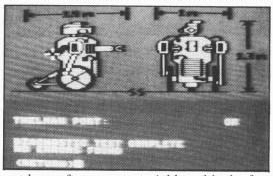
The opening "log-on" sequence is a little puzzling at first, but that's the idea.

You should finish up in control of a robot device belonging to an ambitious company bent on dominating the world by their control of the natural forces locked in the Earth's core.

Things have gone wrong at the secret test site and the pieces of a shredded document giving details of the cock-up have fallen into the hands of spies dotted round the globe. You must use the subterranean tunnels criss-crossing the globe to travel from city to city and recover the evidence which must be delivered to the FBI in Washington before you time runs out.

You are given a sum of money to begin your task and your problems begin — each spy has two items for sale, available only after he has agreed to part with his piece of document. You must be very careful to buy only what is necessary or you'll run out of cash and, most tricky of all, some spies will accept one of several different items but some will insist on only one of the 20 on offer.

If this isn't enough, you seem to have got a duff robot which begins to go on the blink



not long after you start. Add to this the fact that the guilty firm twigs your presence and you've got a really tight game on your hands.

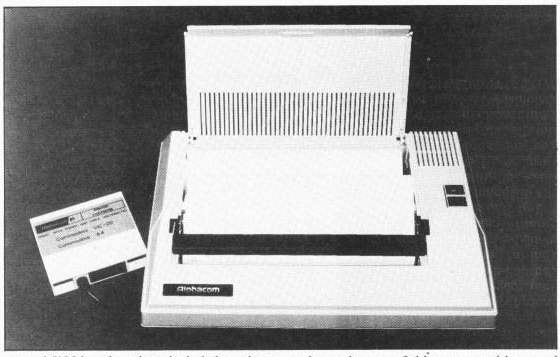
Clever sound effects and excellent graphics, particularly in the eleven surface locations, combine to make this an immensely playable game that can only add to the good reputation that Activision has been building with the quality of their recent releases.

Next month I shall brave the danger of **Terrormolinos**, uncover the cleaner secrets of **Adrian Mole** and hopefully come face to face with the **Worm in Paradise.** ■

HOT PRINTER

Competition in the low price printer market is hotting up — literally, in the case of Alphacom's 81 thermal printer. ***John Cochrane*** *checks it out*

NOT SO long ago the only type of printer which most users of home micros could hope to afford was the so-called thermal printer. Thermal printers work on the principle of passing a print head over the surface of special heat-sensitive paper. The print head provides a very small amount of heat, very precisely and rapidly controlled so that a line of characters can be printed out. At each point on the paper where heat is applied a dot is created, the combination of these dots forming the printed characters. The heat-sensitive paper, which normally comes in roll form, is more expensive than plain paper however.



Simplicity

The low cost of thermal printers comes from their relative simplicity, as the print head has no internal moving parts. The principal competitors to thermal printers are currently the cheap dot-matrix printers. These have complex print heads which use tiny needles to create each dot rather than the heat source. Dot-matrix printers require a print-ribbon to function, which sits between the print head and the paper and leaves a dot of ink on the paper whenever one of the print-head needles is activated.

Obviously, with their needles and ribbons, dot-matrix printers are more complex to produce than thermal printers and thus more expensive. Over the past few years however the costs of manufacture of all types of printer have fallen considerably, as manufacturing technology improves and as the scale of manufacture increases. A major component in the purchase price of any printer these days is the cost of distribution and marketing, which will be roughly similar for all printer types. The upshot of all this is that the price advantage of thermal printers has been eroded away and very few new thermal printers are being produced.

Alphacom, Inc. of California specialise in low-cost thermal printers. They were contracted by Times in the USA to design a cheap printer for the Sinclair computers to be sold by Timex in the States (the Sinclair ZX printer was viewed as unsaleable there). This printer was then imported into Europe as the Alphacom 32. As it was designed for the Sinclair machines it only had a 32 column print width, but was available then at around £60, and it gave a clear and reliable print when dot-matrix printers were still costing upwards of £300 (allowing for leads and interfaces).

Demand from owners of other makes of home computer encouraged Alphacom to redesign their printer, the result being the Alphacom 42. The cost of the 42 was up around £100 but the printer included a unique feature of a changeable plug-in cartridge-type interface-lead allowing it to be used with nearly any of the popular computers without the need for additional interfaces or buffers. The Alphacom 42, despite it's versatility, did not prove as popular as was hoped, possibly because it was considerably more expensive than the version for the Sinclair.

Now Alphacom have gone a step further. The latest model, the 81, includes the plug-in interface-lead and doubles the paper width to give 80 columns. The looks of the Alphacom 81 are also much improved (to my eyes at least) over those of its predecessors. Many of the printer components are plastic rather than metal, which leads to a light design but of good quality. An internal metal chassis provides strength and sufficient weight to keep the printer where it is supposed to be. Overall the printer gives the impression that, if not mistreated, it should prove reliable.

Interface

In use the printer is fast and quiet. With the correct interface-lead it behaves just like a Commodore printer, and is hence compatible with most commercial software. One problem which is common to nearly all thermal printers however is the quality of the finished printed page. Although the Alphacom produces clear black or blue print depending on the paper used, the paper is in a form which means that you must tear it off in page-sized pieces as it is printed. If you want neat even sized pages you must further trim the paper and some how iron out the curl; not the sort of thing to use with a word processor. As a cheap means of producing program listings or notes for your own use the Alphacom 81 works just fine.

Graphics

As well as printing text the Alphacom can be used in graphics mode, which means that provided you don't mind writing your own software you can produce screen dumps or high-resolution pictures using the printer. For text you can choose between normal, underlined, reverse (like reverse video), and elongated text along with the Commodore graphics characters. All the options are detailed in a short but surprisingly well-written manual which comes with the special Commodore interface-lead.

Competition for the Alphacom 81 comes from the old faithful Commodore 801 and the Brother HR-5C. It's worth considering all of these if you are in the market for a cheap printer, but decide exactly what you want from a printer and look at discount prices before you choose between them. Prices tend to fluctuate these days, but the Alphacom at £75 looks the cheapest at the moment. ■

HARDWARE: Alphacom 81 Printer
MICRO: Commodore home computers with serial port
PRICE: £75 (Roll-paper = £6.61 for 2 rolls)
SUPPLIER: Dean Electronics Limited, Glendale Park, Fernbank Road, Ascot, Berkshire. Tel: (0344) 885661.

1541 in first gear

In search of speedier disk operation, ***Jeremy Hall*** *tries out two easy-to-use turbo cartridge systems, one from the States and one home grown*

OWNERS of the 1541 disk drive breathed a sigh of relief when devices to speed up its operation first began to appear. No longer would a large program take 2 minutes to load. The trouble was they usually needed modification to either the 1541 or 64 (or both), to achieve the results, invalidating any warranty.

The two new devices reviewed here are 'plug in and go' cartridges, which involve no internal modification to either the drive or computer.

Epyx Fastload

The *Epyx Fastload* cartridge is from American software house Epyx, and has only recently become available in this country. It only LOADs programs at high speed, so SAVEing is still a slow chore. The speed of loading is greatly improved (up to five times). The cartridge won't load every type of protected disk but works with a lot of them. If it won't load a program there's no need to unplug it, simply use the built in disable facility.

A lot more than speed increases are offered by this cartridge. To load and run the first program on the disk simply hold down the CBM key and hit RUN/STOP. To load the disk directory type "$" and press RETURN. This loads the directory to the screen only, so you don't lose the program you have in memory. The "(d" command can be used to send any command to the drive, or on its own tells you the drive's status. So, for instance, to format a disk you would enter "(dNO:NAME, ID". You can use all the usual LOAD/ SAVE commands, but a few short cuts are provided:

/NAME replaces LOAD"NAME",8
%NAME replaces LOAD"NAME",8,1
-NAME replaces SAVE"NAME",8

Also provided in the cartridge are a disk and file copy facility, accessed via a series of menus. The disk copier is not particularly fast, and requires the destination disk to be formatted before copying commences. The file copier will only copy one file at a time, and you have to enter the filename manually. A machine code monitor is included and entered by typing "!" and pressing RETURN. This is quite a useful addition, although the syntax of some of the commands is a bit odd if you're used to standard monitors. Finally there's a track editor facility which allows you to load any particular sector of a disk, edit it on screen, and then write it back.

The documentation consists of a single sheet of glossy paper folded in half with all the available commands explained briefly but comprehensibly.

Quickdisk+

Quickdisc+ is a British product at less than half the cost of the Epyx product. Its LOADing speed is approximately the same, but it also offers an improvement when SAVEing speed is approximately the same, but it also offers an improvement when SAVEing (see comparison table 1). Fast LOADing/SAVEing is indicated by a striped screen effect similar to some tape turbos. The cartridge can be disabled by typing "(dQ", and a handy help facility accessed with "(dH", which prints a summary of all the commands available. Unlike the EPYX, this cartridge can be used with device number 8 or 9, so people with two drives are catered for.

Quickdisc+ has the same DOS commands as EPYX (/,%,-,$ and (d), with the addition of a useful extra:

NAME replaces LOAD"NAME",8:RUN

Formatting a new disk is normally a painfully slow process, but with QUICKDISC in place it takes just 20 seconds (not 10 seconds as claimed in the instructions!) — approximately 5 times faster than normal (see comparison table 2).

The fast file copy is extremely useful and very well implemented. Simply type "(dC", insert the source disc (disk from which you wish to copy files), press RETURN and each filename on the directory is printed on the screen one at a time with a YES/NO prompt next to it. To copy the file press "Y", to ignore it press "N". When the last file on the directory is reached the selected files are read in at high speed. The user is then prompted to insert the destination disk and so on until all the files are copied.

The disk Backup is also quite good and easy to use, taking just over 4 minutes to copy a whole disk (unprotected discs only!!).

The Centronics printer software which is built in will drive most printers connected via the user port. This facility did not work on the first review cartridge I was sent, however The Micro Centre quickly sent me a replacement which worked fine. Type "(dP" and the interface will be switched on, giving a summary of all the options on the screen. OPENing the printer as device 4 selects CBM characters, device 5 selects normal characters and a secondary address of 7 gives lower case. The interface can be switched off by typing "(dE".

Finally, a reset switch is built into the cartridge which will allow you to break out of any program without the need to power off and on, and does not destroy the contents of main memory.

The documentation which I received was of similar standard to the EPYX cartridge, and quite adequate.

Conclusions

If you want to use either device with a particular program, check that the program will load with the cartridge before you buy it. If you need a machine code monitor and track editor built into your turbo cartridge then EPYX FASTLOAD is the one to go for. Otherwise QUICKDISC+ is superior in virtually every other way. Add to this the fact that it costs less than half the price of the EPYX, and it becomes a must for every 1541 owner. ■

COMPARISON TABLE 1 — SPEED

	Normal	EPYX	Quickdisc+
Load 100 Blk Prg File	65 secs	13 secs	13 secs
Save 100 Blk Prg File	70 secs	70 secs	38 secs
Copy 100 Blk Prg File	141 secs	90 secs	52 secs
Format New Disk	91 secs	91 secs	20 secs
Copy Disk	15 mins+	8 mins+	4 mins

COMPARISON TABLE 2 — FACILITIES

	EPYX	Quickdisc+
Fast Load	YES	YES
Fast Save	NO	YES
Fast Format	NO	YES
Disable Facility	YES	YES
DDS Commands	YES	YES
Fast File Copy	AVERAGE	VERY GOOD
Fast Disc Copy	AVERAGE	GOOD
Track Editor	YES	NO
Machine Code Monitor	YES	NO
Help Facility	NO	YES
Device 8 or 9	NO	YES
Centronics Software	NO	YES
Reset Switch	NO	YES

PRODUCT: *Epyx Fastload Cartridge.*
SUPPLIER: The 64 Software Centre, 1 Princeton St, London WC1R 4RL, Tel: 01-430 0954.

PRODUCT: *Quickdisc+*
SUPPLIER: Micro Centre, Bridge St, Evesham, Worcestershire.
Tel: 0386 49641.

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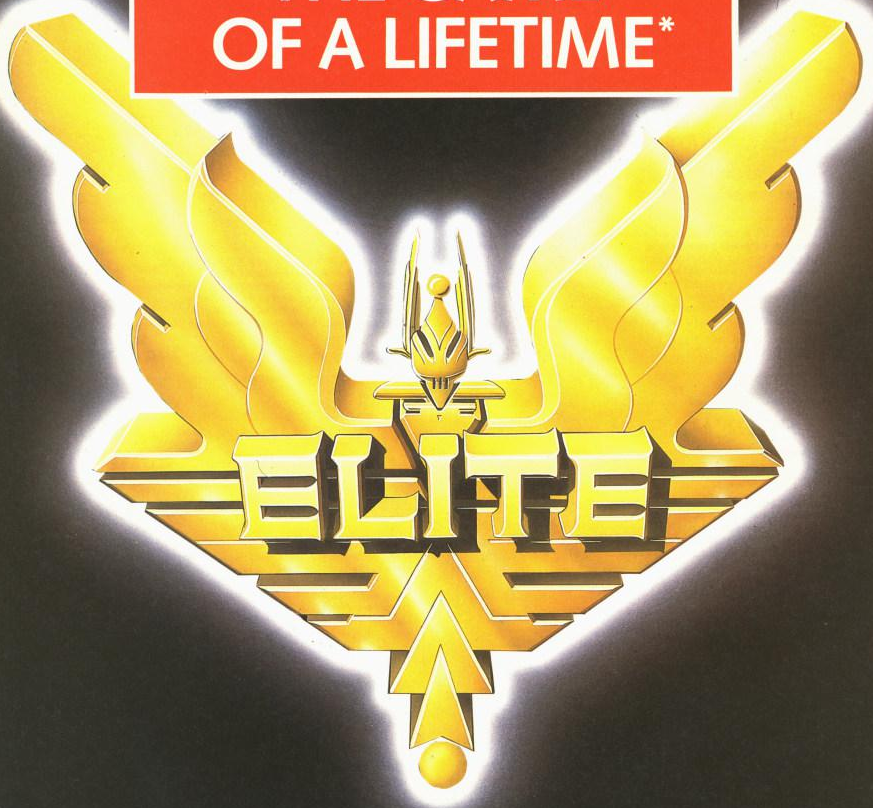

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*Zzap! 64 Magazine

Window on the world

This simple program from ***Duncan Anderson*** *allows you to easily define a screen window on your 64, protecting text as you input commands*

IN USING RML 480, and 380Z micros in the course of my study, I have found one particular feature of their operating systems to be of particular use — that of defining a scrolling window, which is then considered as the whole screen.

This feature is particularly useful where the user is required to make an input from the keyboard — all too often on the 64, a painfully set up screen display soon scrolls off the top, when the user makes a mistake, and a REDO FROM START error message appears, or the input takes two lines, instead of the anticipated one line. Never fear; with the use of this short machine code routine, you can define an input window, and protect your elaborate instructions/graphics. In the writing of this program, there were two ways of approaching the problem.

To use the routine, type in the BASIC listing, and save it before running, as it will NEW itself upon completion. When the program has run, the screen will show credits on the top half of the screen, which is now protected by a window in the bottom half — so make the screen scroll, and the credits should stay in place.

Furthermore, the 'Home', and 'clear' keys have been redefined so that they only act upon the window — clear only clears the window, and home homes the cursor to the top L/H corner of the it. To create a window of your own dimensions, issue the command !W, followed by a number from 0 to 23 (the line-number of the top of the window).

In setting about writing this routine, I realised that I had two possible causes to take, namely:

(i) Rewrite the screen printing, and scrolling routines, using the vectors, or (ii) Copy the ROM's into RAM, and make changes, as necessary to them.

Interpreter

I settled for the second, since the amendments to the operating system are surprisingly small, and rewriting these routines would have involved copying large sections of the Kernal into my program. Furthermore, I decided to implement a special command in BASIC to erase the need for SYS, and POKE statements in order to get the parameters into the routine — the !W command, unusually named to simplify the recognition of it within the interpreter.

When the machine code is initialised, two processes are performed:

(i) The vector for token evaluation ($30A-$30B) is redefined to point to the new evaluation routine, whose Pseudo-code, is: 1. Jump to the subroutine which places the next byte of BASIC text into the accumulator ($73). 2. Compare this with '!' (our marker for new keywords) 3. If new keyword, then jump to our routine 4. Else, replace the byte of text, and jump to the old evaluation routine.

(ii) The Kernal and Basic ROM's are copied into the RAM which they overly, appropriate alterations are made, and the ROM's switched out to reveal the new improved operating system.

When the !W command is initialised, control is transferred to the window routine which evaluates the parameter (by jumping to two ROM routines – $AD8A, which evaluates the parameters, placing in the floating point accumulator. Then the routine at $B7F7 is used to convert it, the result being in the A/Y registers, and places them into the operating system.

For those who may wish to add other machine-code routines while this one is operative, please note that the zero-page locations $FB & $FC, are now used as storage for the window routine.

As can be seen from this program, the addition of commands into the operating system is relatively straight forward. So long as the inbuilt routines in the computer are used, there is little to do in implementing the command — the actual code for getting the OS to recognize the command, very little code indeed, and that includes checks for errors. ■

```
1 REM ********************************
2 REM **** WINDOW UPDATE TO KERNAL ****
3 REM ****    (C) D.ANDERSON 1985    ****
4 REM ****  THIS PROGRAM WILL NEW    ****
5 REM **** ITSELF - SO SAVE BEFORE ****
6 REM ****          RUNNING         ****
7 REM ********************************
100 ADDRESS = 49152
105 READ HEX$
110 IF HEX$="XX" THEN GOTO 7000
120 GOSUB 1000
125 PRINT "■";ADDRESS
130 POKE ADDRESS,DECIMAL
135 ADDRESS = ADDRESS + 1
140 GOTO 105
1000 REM *** HEX TO DECIMAL CONVERT ***
1005 DECIMAL=0
1010 FOR COUNT=1 TO LEN(HEX$)
1020 DECIMAL=DECIMAL*16
1030 IF MID$(HEX$,COUNT,1) > "9" THEN 1060
1040 DECIMAL=DECIMAL+ASC(MID$(HEX$,COUNT,1))-48
1050 GOTO 1070
1060 DECIMAL=DECIMAL+ASC(MID$(HEX$,COUNT,1))-55
1070 NEXT COUNT
1080 RETURN
```

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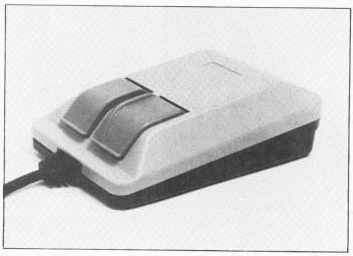

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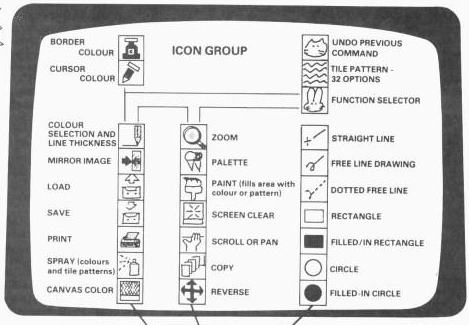

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```
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5010 DATA 09,03,A9,A0,85,FC,A9,00
5020 DATA 85,FB,A0,00,20,21,C0,A9
5030 DATA E0,85,FC,A0,00,20,21,C0
5040 DATA 60,B1,FB,91,FB,C8,D0,F9
5050 DATA E6,FC,A5,FC,F0,05,C9,C0
5060 DATA D0,EF,60,A9,35,85,01,A9
5070 DATA FF,85,FB,A9,18,85,FC,A9
5080 DATA 20,8D,66,E5,A9,B2,8D,67
5090 DATA E5,A9,C0,8D,68,E5,A9,EA
6000 DATA 8D,69,E5,8D,6A,E5,8D,6B
6010 DATA E5,A9,A6,8D,5E,E5,A9,FC
6020 DATA 8D,5F,E5,A9,E4,8D,64,E5
6030 DATA A2,FB,8E,65,E5,A2,D0,8E
6040 DATA 66,E5,A2,F8,8E,67,E5,A2
6050 DATA 20,8E,68,E5,A2,B2,8E,69
6060 DATA E5,A2,C0,8E,6A,E5,A9,EA
6070 DATA 8D,6B,E5,60,20,73,00,C9
6080 DATA 21,F0,06,20,79,00,4C,E7
6090 DATA A7,20,73,00,C9,57,F0,03
6100 DATA 4C,08,AF,20,73,00,20,BC
6110 DATA C0,88,8C,F7,E8,84,FB,4C
6120 DATA AE,A7,A6,FB,E8,86,D6,A2
6130 DATA 00,86,D3,60,20,8A,AD,20
6140 DATA F7,B7,C9,00,D0,05,C0,18
6150 DATA B0,01,60,4C,48,B2,16,14

6160 DATA XX
7000 REM *** INSTRUCTIONS & INIT ***
7010 SYS 49152
7020 PRINT"■";
7030 PRINT
7040 PRINT"        *** C-64 KERNAL V2.2 ***"
7050 PRINT
7060 PRINT" *** (C) ~.♠NDERSON & ~OMMODORE 1985 **"
7070 PRINT
7080 PRINT"      *** 38908 !♠●↖~ BYTES FREE ***"
7090 PRINT:PRINT:PRINT"  LOCATIONS $C000 - $C0CB NOW OCCUPIED"
7100 PRINT"              BY KERNAL UPDATE"
7110 PRINT"        WINDOW COMMAND:-  !W TOP"
7130 PRINT CHR$(14);CHR$(8);
7140 !W 011
7150 NEW
```


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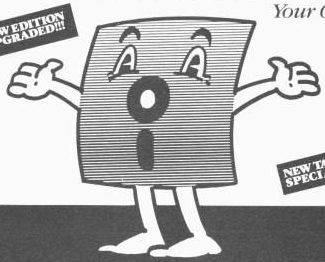

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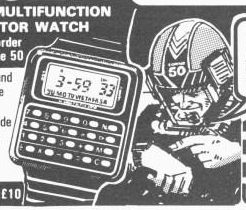

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11. Invasive Action
12. Noughts & Crosses
13. Boggles
14. Pontoon
15. Ski Jump
16. Hangman
17. Old Bones
18. Thin Ice
19. Orbitter
20. Motorway
21. Force Field
22. Nim
23. Tunnel Escape
24. Barrel Jump
25. Cannonball Battle
26. Overtake
27. Sitting Target
28. Smash the Window
29. Space Ship
30. Jet Flight
31. Phaser
32. Intruder
33. Inferno
34. Ghosts
35. Submarines
36. Rocket Launch
37. Planets
38. Black Hole
39. Dynamite
40. Do Your Sums
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THE UTILITY SPECIALISTS

THE NEW GENERATION OF BACKUP METHODS HAS ARRIVED

FREEZE FRAME

"**Freeze Frame**" is the product that 64 owners have been waiting for. At the flick of a switch "**Freeze Frame**" will take control of your computer and freeze the program in memory allowing you to **SAVE it to tape or disc**. The user are endless, but typical applications are:

TAPE TO DISC: ANY program can be frozen and **transferred to disc** regardless of the type of loading technique used. Even slow incorporates a fast loading system.)

DISC TO TAPE: ANY memory resident disc program can be backed up onto tape. (Choice of normal or turbo save speed.)

DISC TO DISC: It is possible to make a self contained back up of disc based programs that will then load at high speed and allow the rest of the disc to be used as normal

TAPE TO TAPE: Tape back ups can be made at turbo speed with just one tape deck.

In fact "**Freeze Frame**" will **FREEZE any program** that is memory resident, and allow you to make a back up of that program onto tape or disc. The beauty being that the saved version can be of machine language is required. Just follow the prompts and the simple instructions for fast, fast booting, single file. That process is **completely automatic**, no knowledge of BASIC, or machine language is required. Just follow the prompts and the simple instructions for **100% success**

"**Freeze Frame**" is a hardware "device" that plugs into the cartridge port of the 64. It does **NOT** clutter the entire contents of memory. Just the **working program**. Programs converted run **independently** of the hardware.

ONLY £39.95

WARNING: Don't be mislead by other adverts. If you want to transfer turbo load programs to disc, software only utilities are **inadequate**. They suffer from a variety of drawbacks including poor success rate, awkward to use, greedy on disc space and unenticing.

DOUBLER

The tape back up "device"

Doubler has been an **enormous success** and continues to sell very well. Why? Because it is the **best product of its type** on the market. Doubler uses a unique method that copes **all types of software** regardless of speed. It consists of **hardware and software**. The software is the key part as unlike other products of its type Doubler creates a **brand new machine copy**. It is very easy to use and very successful. In fact our tests **have proved** that this "device" can achieve **100% success**.

Requires access to two data recorders.

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FAST LOAD PLUS UTILITY CARTRIDGE

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Fast LOAD and SAVE (four to five times normal speed). Works with most protected software. Can be switched in and out from the keyboard.

Fast Format takes just 10 seconds.

Fast Backup copies an entire disc in four minutes. (Not heavily protected software.)

Fast File Copier for selective fast copying.

Improved DOS commands (DOS 5 !) makes for easy use of the disc drive e.g. %RETURN% will LOAD and display a directory without overwriting BASIC. SHIFT RUN/STOP will LOAD "0:*",8,1 etc etc. Very, very useful.

Incorporates Centronics printer software (user port) **with CBM graphics** capability. See "Commodore Connexion" for suitable lead.

A RESET switch is fitted. (We have found this to be "unstoppable" - it also preserves the tape buffer.)

NO MEMORY IS USED by this cartridge, it is totally "transparent" and uses special switching techniques.

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No extra connections are necessary with QUICKDISC+ and unlike most similar products it is compatible with printers and second drives.

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Now the ultimate disc copying and utility program for the CBM 64 with 1541 disc drive has been **improved even further**. As well as general improvements plus the addition of some useful utilities two important new programs have been added:

The Evesham Nibbler
This is the first copier of its kind to appear on the UK market. It is a **true nibbler** (not a byte for byte copier that will only copy **ALL DOS errors automatically**. This includes DOS errors 20-29, plus non standard errors etc. They are all automatically corrected. No correspondence, no knowledge is required at all, just as normal. Why, and produces perfect copy. Yet it **only takes eight minutes** to copy an **all discs tested** average **nibbler every** disc. No other **all disc tested** nibbler can make **a claim above** anything else available.

Fast File Copier
An **incredibly handy** selective file copier that LOADS and SAVES at **five times** normal speed. Useful to have on a disc until you have used it.

Other utilities include the following: **Fast Format** as well as these programs including **Disc Editor** plus several host of useful utilities, **Sector Scratch/Patch**. **Selective Menu Maker**, **Directory Enhancer**, **Fast Format** (alternative format routine version), **Screen Dump** (customizes machine code version), **Fast Backup** (three times faster), etc. etc. **Fastcopy filename essential purchase** for the 1541 user. This program is an **essential purchase** for the 1541 user.

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Customers with earlier versions may return them along with £9.95 for V3.5!

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ROCKET
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TAPEIR
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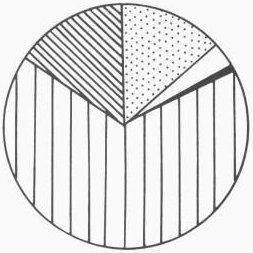
READERS SURVEY

A few issues back we carried out a readers survey. After an enormous response, we collated all the results, and have been using the information to give you the sort of Commodore magazine you want.
For your interest, here are some figures with a few comments.

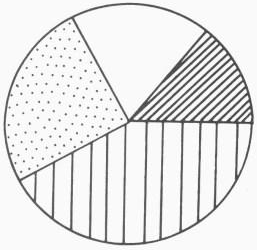
MICROS OWNED



CBM 64:	67.8%
Vic 20:	14.9%
C16:	13.8%
Plus/4:	3.4%
SX64:	0.1%

It would be interesting to run this survey again in a year, and assess the penetration of the C128 and Amiga.

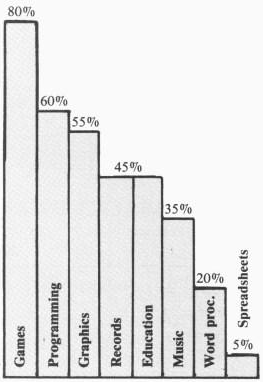
READERS' AGES



10-20:	42.4%
21-30:	24.7%
31-40:	19.2%
40+:	13.7%

Compunet subscribers: 4.5%.
Micronet subscribers: 3.9%.
30% of readers say they may change their micro in the next year; most popular possibility is the C128.

MICRO USES



Total adds up to more than 100% due to overlapping interests.

MAGAZINE FEATURES

We asked you how interested you were in a range of subjects, and how much you liked the various features in Commodore Horizons. The subjects in which readers are most interested were:

Basic programming:	65%
Graphics:	60%
Arcade games:	45%
Music:	45%
Machine code:	40%
Hardware reviews:	40%
Communications:	25%
Word processing:	15%
Databases:	15%
Adventures:	10%
Spreadsheets:	10%

Most games players were understandably least interested in spreadsheet, database and wordprocessing features. Communications articles were also low on most readers' list of priorities.

Readers' opinions on the regular features fell roughly into the same pattern. The most liked features were:

Letters:	85%
Competitions:	85%
News:	75%
Games:	70%
Utilities:	70%
Hardware:	60%
Programming:	60%
Cartoons:	55%
Imprint:	50%
Adventures:	30%
Profile:	20%

The most disliked features were the Adventure column (25%), Profile (20%), and cartoons (20%). Very few disliked the news, letters, hardware reviews or competitions. Adventure games are obviously an acquired taste: you either love or hate them. We can't understand the number who disliked the Profile features, since many readers requested more. And The Editor is very fond of the cartoons, so hands off. On printed listings, 20% typed them in often, 75% sometimes and 5% never.

Most popular suggestions for extra features included news from America, interviews with programmers and computer users, simple hardware projects and interfacing, and a page of short programming routines and games tips. We'll be looking at all these ideas in future issues.

There seems to be a feeling that there aren't enough programming articles and readers' listings, so we'll be looking at the possibilities of boosting them. The readers' listings section obviously relies very heavily on you, so start sending those cassettes in!

Thanks to everyone who took the time to fill in the forms; we hope to be able to provide you with a better magazine as a result of your efforts.■

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CHRISTMAS SPECIALS

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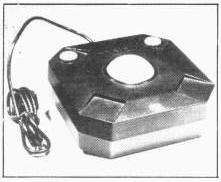

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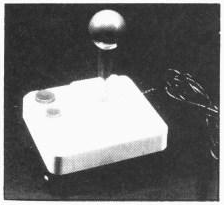

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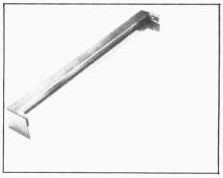

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review in COMMODORE USER

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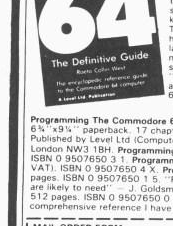

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Sound words

I AM designing and making a technology project at school, and am looking for any available information of sound recognition devices for the CBM 64. Could you give me some idea what is involved?

Terry Jeynes
Tewkesbury
Glos

HAVE A LOOK at the September issue, where we review the Anirog *Voice Master*. This should give some ideas. Also available is the *Big Ears* system from William Stuart, which was reviewed in April 1985.

Generally speaking, sounds are transformed into waveforms using a microphone and an analogue to digital convertor. The waveform is then digitised, and compared with similar tables in the computer's memory. The appropriate machine language programming and the necessary hardware would be yours to design; if you can obtain a copy of Rodney Zaks' *6502 Applications Book* from Sybex, ISBN number 0-89588-015-6, this might be of some help to you.

Load error

I HAVE A 64, and the tape save has stopped working. The fault lies with the 6510 CPU, and I will have to replace it. My 64 is only about 18 months old, and I know of five other 64 owners who have had this problem, and all have used a reset switch. Could this be the cause of the problem? I have also heard that in 128 mode, the C128 refreshes the screen too slowly for it to be used as a games machine. Is this true?

P Rogers
Skelmersdale
Lancs

IT SOUNDS like there may be faults in the reset switches, leaving some voltage floating around where it should not be. Have you tried interchanging the two 6526 chips? It may cure the problem provided you fix the faulty reset switch.

No, the screen refresh is not slower in C128 mode; what can happen in 80 column mode is that when using bitmapped graphics (only possible in machine language) all data is passed through a register in the 8563 (80 column video chip) and not memory mapped, so that updating the screen will take twice as long as either the 128 in 64 mode, or the 128 in 40 column mode, which uses the 8566 (40 column video chip). But the 128 is fine in 40 column mode for games programming.

Vic words

I AM considering buying a word processing package for the Vic 20. Could you suggest the best package which will be suitable for general use and writing short letters?

Andrew Smart
Warminster
Wilts

FOR ANY VIC, including unexpanded, you can try *Heswriter*, a cartridge which fits in the expander port. This is available from Thorn-EMI at Thomson House, 296 Farnborough Road, Farnborough, Hampshire GU14 7NU.

With at least 8K, try *Word Processor 5.23* from Intelligent software. This is an American import, so you will have to contact a specialist dealer. With at least 16K, you could try *Vicwriter*, which should be available from Commodore's Vicsoft on 0536-205555. Another good choice would be *Word Manager*, which supports 80 columns.

Three sheets

I REQUIRE a spreadsheet for the 64, but there is a bewildering array of possibilities. I have already been caught out buying a "cheapie" home finance package, and do not want to make the same mistake again.

Basically I require a spreadsheet which can generate pie and/or bar chart displays, and also have relative file handling so I can use it like a filing cabinet, at less than £50.

Dr M J Atkins
Nettlebed
Oxon

AUDIOGENIC'S *Micro Magpie* generates horizontal or vertical bar graphs or scatter graphs, and is also a fully user programmable database management system.

Another option is *Practicalc 2*, which gives an 80 column option which is legible though not recommended for prolonged viewing.

A bit more expensive, but still good value for money, is *Vizastar*, which gives full database plus line and bar graph facilities. See your local dealer for an opportunity to compare the options.

Quiz query

I AM writing a quiz game for my C16, which has two players pressing buttons when they think they know the answer. There are going to be about 600 questions in the quiz, but I can't work out a routine to make it pick random questions then not pick them again. Could you help me?

Andrew Roberts
St Helens
Merseyside

I ASSUME that your 600 questions are in the form of data statements in your program. If you don't mind the questions always being asked in the same order, a simple loop will suffice.

```
100 FOR I=1 TO 600:
READ Q$,A$:PRINT "The
next question is" Q$
110 INPUT "Your answer";
R$
120 IF R$=A$ THEN
PRINT "Correct":
C=C+1:NEXT:GOTO 140
130 PRINT "Wrong answer":
NEXT
140 PRINT "You have
answered "C" questions
correctly"
150 END
160 DATA REM each
question, followed by its
answer.
```

The alternative is to pick a question using a number generated using RND(X), from 1 to 600 inclusive. The questions and answers will have to be loaded into an array first. The number picked will then print Question$(I) say, and check the answer. Using a marker array such as A(I), which is set to equal 1 for each value of I that is used, test this when generating a random number to make sure that this number has not been used previously. If so, then discard it and try again. You must also test with a counter to see if you have already used all 600 questions, then exit from the random number loop otherwise you will go around forever!

Bulletins

I WOULD LIKE to find out something more about "bulletin boards". I understand that you need a modem to access them, but what sort of hardware and software do you need to set up your own? Is it necessary to get any form of license to operate one? And what is the best way to publicise such a bulletin board when you've set it up?

L Hart
South London

NO LICENSE is required to run a bulletin board — after all, you are using the telephone, not broadcasting. Most bulletin boards in this country operate at 300 baud, full duplex, with only a few using reverse Prestel speed (which enables a Prestel modem to access them). Prestel and Micronet operate on 1200/75 baud. Suitable software to run a 300 baud service was listed in the excellent American magazine, Compute's Gazette, in three parts recently.

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Artist 2000

This 64 utility comes from Frank Bingley of Market Harborough

THIS PROGRAM, Artist 2000, is designed to run on the 64 using a joystick in Port Two. As the name suggests, it allows you to design pictures, save them to tape or disk, and recall them as you desire.

Pictures are created using the 64's CBM graphic character set. Three screen locations are used; one for creating the design, one for displaying the instructions, which are accessed by pressing "I". If the space bar is pressed, it accesses a third screen which displays the whole 255 character graphics set. On this screen, the cursor flashes at the top left hand corner. Move the cursor over the desired character with the joystick, press the fire button, and the program will return to the design screen.

Pictures MUST be STORED by pressing F7 before saving to tape or disk. This means a short delay while the arrays are filled with data. Typical reloading times are 6 minutes for tape or 1 minute for disk.

Each section of the program is headed with optional REMs.

You might like to use this program to enter our Compunet Graphics Challenge. If so, please let us know that you have used it when you send in your entries.

```
 1 REM ************************
 2 REM *       ARTIST 2000      *
 3 REM * BY FRANK BINGLEY 1984 *
 4 REM *********************************
 6 REM * CLR PAGE1,PROTECT PAGE 14/15 *
 7 REM *********************************
 9 PRINTCHR$(144):GOSUB1500:POKE52,56:POKE56,56
10 X=1524:C=54272:J=56320:CL=7:N=160:DIMCA%(1000),CC%(1000)
20 PRINTCHR$(147)
27 REM ********************
28 REM * PAGE 15  DISPLAY *
29 REM ********************
30 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60:PRINTCHR$(147)
40 PRINT"■■                ARTIST 2000                "
50 PRINTTAB(15)"OPTIONS":PRINT
60 PRINT"F1......CLEAR SCREEN"
70 PRINT"F3......CHANGE COLOUR"
80 PRINT"F5......RECAL PICTURE"
90 PRINT"F7......STORE PICTURE"
100 PRINT"SPACE AND JOYSTICK TO CHANGE CHARACTER"
110 PRINT"(I).....INSTRUCTIONS":PRINT:PRINT"PRESS FIRE TO ERASE"
120 PRINT:PRINT"F2......LOAD PICTURE FROM TAPE"
130 PRINT"F4......SAVE PICTURE TO TAPE"
140 PRINT"F6......LOAD PICTURE FROM DISK"
150 PRINT"F8......SAVE PICTURE TO DISK"
160 PRINT:PRINT"STORE PICTURE BEFORE SAVING!"
170 PRINT:PRINT"PRESS KEY WHEN READY"
180 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60
190 POKE53280,15:POKE53281,15
200 GETM$:IFM$=""THEN200
207 REM ********************
208 REM * BACK TO PAGE ONE *
209 REM ********************
210 POKE53272,21:POKE648,4:POKE53280,0:POKE53281,0
220 POKE54296,15:POKE54277,200:POKE54278,200:POKE54276,17
227 REM ****************
228 REM * MAIN PROGRAM *
229 REM ****************
230 GETA$
240 IFA$="I"THEN180
250 IFA$="■"THENPRINTCHR$(147)
260 IFA$="■"THENGOSUB500
270 IFA$="■"THENGOSUB1000
280 IFA$=" "THENGOSUB1100
290 IFA$="■"THENCL=CL+1:IFCL>14THENCL=1
300 IFA$="■"THEN600
310 IFA$="■"THEN800
320 IFA$="■"THEN1200
```

```
330 IFA$="■"THEN1400
340 TT=TT+1
350 IF(PEEK(J)AND8)=0THENX=X+1:TT=0:IFX>2023THENX=X-1
360 IF(PEEK(J)AND4)=0THENX=X-1:TT=0:IFX<1024THENX=X+1
370 IF(PEEK(J)AND2)=0THENX=X+40:TT=0:IFX>2023THENX=X-40
380 IF(PEEK(J)AND1)=0THENX=X-40:TT=0:IFX<1024THENX=X+40
390 IF(PEEK(J)AND16)=0THENPOKEX,32:GOTO230
400 IFA=XTHENPOKE54296,0
410 IFA<>XTHENZ=INT(RND(1)*254)+1:POKE54273,Z:POKE54272,Z:POKE54296,15
420 POKEX,N:POKEC+X,CL
430 IFTT=100THENCS=INT(RND(1)*15)
440 IFTT<100THENPOKE53281,0:POKE53280,0
450 IFTT>100ANDTT<150THENPOKE53281,CS:POKE53280,CS
460 IFTT>180THENTT=0
490 A=X:GOTO230
497 REM ******************
498 REM * STORE PICTURE *
499 REM ******************
500 POKE54296,0:FORA=0TO999
510 CA%(A)=PEEK(1024+A):CC%(A)=PEEK(55296+A)
520 NEXTA:PRINTCHR$(147):RETURN
597 REM ****************************
598 REM * LOAD PICTURE FROM TAPE *
599 REM ****************************
600 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60:PRINTCHR$(147)
610 POKE53280,15:POKE53281,15
620 OPEN1,1,0,"COMP.ART"
630 FORA=0TO999
640 INPUT#1,CA%(A):INPUT#1,CC%(A):NEXTA
650 CLOSE1
660 GOTO20
797 REM ************************
798 REM * SAVE PICTURE TO TAPE *
799 REM ************************
800 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60:PRINTCHR$(147)
810 POKE53280,15:POKE53281,15
820 OPEN1,1,1,"COMP.ART"
830 FORA=0TO999
840 PRINT#1,CA%(A):PRINT#1,CC%(A):NEXTA
850 CLOSE1
860 GOTO20
997 REM ****************************
998 REM * RECAL PICTURE TO SCREEN *
999 REM ****************************
1000 POKE54296,0:PRINTCHR$(147)
1010 FORA=0TO999:POKE1024+A,CA%(A):POKE55296+A,CC%(A):NEXTA
1020 RETURN
1097 REM ************************
1098 REM * SELECT NEW CHARACTER *
1099 REM ************************
1100 POKE53272,(PEEK(53272)AND15)OR224:POKE648,56:XX=14336:XP=PEEK(XX)
1110 POKE53296,0:POKE53281,15
1120 IF(PEEK(J)AND1)=0THENXX=XX-40:IFXX<14336THENXX=14336
1130 IF(PEEK(J)AND2)=0THENXX=XX+40:IFXX>15335THENXX=15335
1140 IF(PEEK(J)AND4)=0THENXX=XX-1:IFXX<14336THENXX=14336
1150 IF(PEEK(J)AND8)=0THENXX=XX+1:IFXX>15335THENXX=15335
1160 IF(PEEK(J)AND16)=0THEN1180
1170 XP=PEEK(XX):POKEXX,160:FORQ=1TO20:NEXTQ:POKEXX,XP:GOTO1120
1180 N=PEEK(XX)
1190 POKE53272,(PEEK(53272)AND15)OR16:POKE648,4:RETURN
1197 REM ****************************
1198 REM * LOAD PICTURE FROM DISK *
```

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```
1199 REM ************************
1200 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60:PRINTCHR$(147)
1210 POKE53280,15:POKE53281,15
1220 OPEN8,8,8,"0:COMP.ART,S,R"
1230 FORA=0TO999
1240 INPUT#8,CA%(A):INPUT#8,CC%(A):NEXTA
1250 CLOSE8
1260 GOTO20
1397 REM ************************
1398 REM * SAVE PICTURE TO DISK *
1399 REM ************************
1400 POKE53272,(PEEK(53272)AND15)OR240:POKE648,60:PRINTCHR$(147)
1410 POKE53280,15:POKE53281,15
1420 OPEN8,8,8,"@0:COMP.ART,S,W"
1430 FORA=0TO999
1440 PRINT#8,CA%(A):PRINT#8,CC%(A):NEXTA
1450 CLOSE8
1460 GOTO20
1497 REM ********************
1498 REM * PAGE 14  DISPLAY *
1499 REM ********************
1500 POKE53272,(PEEK(53272)AND15)OR224:POKE648,56
1510 PRINTCHR$(147)
1520 B=14336:FORC=0TO469STEP40:FORAA=0TO19:POKEB+C+(2*BB),BB:BB=BB+1:NEXTAA,C
1530 BB=239:FORC=0TO16:POKE15300+(2*C),BB:BB=BB+1:NEXTC
1540 BB=0:POKE53272,(PEEK(53272)AND15)OR16:POKE648,4
1550 RETURN
```

Zig-Zag

This game for the C16 comes from D O'Connor of Farnham, Surrey

ZIG-ZAG is a simple game using many useful programming techniques. The player, represented by a star in the top right hand corner of the screen, has to move around the screen filling in the blank spaces. Direction is controlled by keys W,A,Z and X. The = key advances the player a level.

You can stop your movement by hitting the side of a room, but this loses points. You must dodge the blocks which appear throughout the room, or the game ends. Points are even for the number of steps covered before the timer runs out. The screen is drawn using second set graphics; the text in line 270 reads PRESS ANY KEY, and that in line 280 GAME OVER.

```
10 PRINTCHR$(14):PRINT"■■■":X=121:L=L+1:F=0:COLOR0,1:P=79:A=0:VOL8
20 FORT=1TO2:PRINT"■                                        ■";:NEXT
30 PRINT"■■■
```

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```
3 GOSUB2000:IFR=1THEN125
10 PRINT"□";
20 PRINT"      PLEASE WAIT"
40 POKE52,28:POKE56,28
50 FORI=7168TO7679:POKEI,PEEK(I+25600):NEXT
60 FORL=7432TO7439:READM:POKEL,M:NEXT
70 POKE36869,255
80 DATA8,28,28,62,127,28,62,127
90 FORN=7448TO7455:READO:POKEN,O:NEXT
100 POKE36869,255
110 DATA255,255,255,255,255,255,255,255
111 FORP=7664TO7671:READQ:POKEP,Q:NEXT
112 POKE36869,255
113 DATA248,48,56,127,127,56,48,248
114 FORR=7648TO7655:READS:POKER,S:NEXT
115 POKE36869,255
116 DATA24,24,60,126,129,66,60,0
125 PRINT"□";
130 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■";
140 PRINT"####ROCKET#COMMAND####";
150 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■";
160 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■";
170 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■";
175 PRINT
176 IFLV=1THENHI=AA
177 IFLV=2THENHI=BB
178 IFLV=3THENHI=CC
186 PRINT"■SC:    LEVEL  ■D 10 PTS";
187 PRINT
190 PRINT"■HI:      ";LV;"    ■K■ 20 PTS";
195 PRINT
200 PRINT"■ROCKETS USED"
220 SC=0:C=12:D=21:A=19:B=14:FL=0:U=0:VV=10:R=1
221 PRINT"S■■■■■■■■■■■■■■■■■■■
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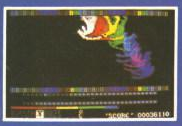

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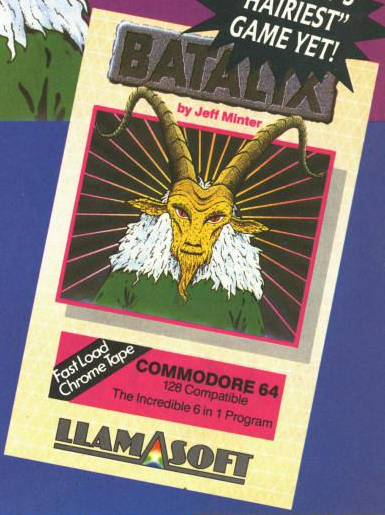

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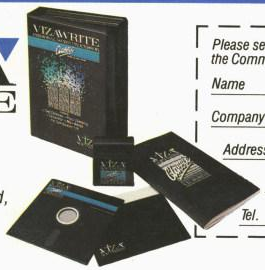

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Plot

This 64 program comes from I Woodley of Potter's Bar, Herts

PLOT is a machine code utility giving the 64 the facility available on most other computers, to define a screen point with X,Y co-ordinates. Type in the program, save it, run it, then new it. Whenever you want to place a character on the screen at a certain point, type SYS49152,x,y, where x is the column number (0-39) and y the row number (0-24). Numbers outside these parameters will give an ILLEGAL QUANTITY ERROR. The machine code resides at 49152, but can be relocated.

```
1 REM ** PLOT **
2 REM ** BY I.WOODLEY **
3 REM ** TO USE TYPE:SYS49152,X,Y **
4 REM ** WHERE X=ROW NO. **
5 REM ** AND Y= COLUMN NO. **
10 FORT=49152TO49177:READA:S=S+A:POKET,A:NEXT
15 IFS<>3206THENPRINT"VALUE OF DATA ERROR"S:END
20 DATA32,241,183,134,87,32,241,183,224
25 DATA25,176,11,164,87,192,40,176,5
30 DATA24,32,240,255,96,76,72,178
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The soul of a new machine

Robcom's Turbo cartridges can massively expand your 64's capabilities. ***Derek Lawson*** *puts them through their paces*

Although housed in a standard Commodore 64 cartridge case, the Robcom Turbo cartridges are in effect programming utilities — the most powerful collection of routines ever collected together in one place.

Make no mistake — the Turbo cartridges are compulsory purchases for any serious 64 user. They overcome many of the problems of Commodore Basic, DOS and hardware, and transform your computer into an altogether more powerful machine. The Turbo cartridges are deceptively plain in appearance, though they come packaged in a smart video-style cases, containing the cartridge, cassette head alignment tape, and a clear and full manual.

Powerful

There are five cartridges, each with a different selection of utilities. The most powerful, the Turbo 50, contains all the available routines, and in my opinion this is the one you should buy. The extra cost involved is small in comparison with the value of the facilities gained.

So what is so special about Turbo 50? What can it do that other programming aid cartridges cannot? Let's run through the facilities.

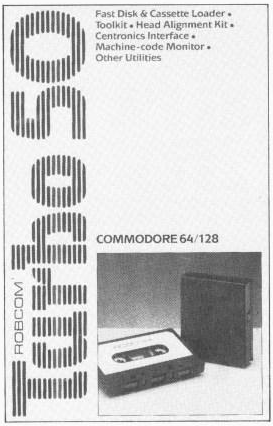
Firstly, the cartridge is machine transparent. It should operate without interference with any existing software. However, in case of problems, you can type QUIT to switch the cartridge off without having to remove it.

The built-in RESET button can also be helpful in the case of keyboard lock-ups, or for resetting programs without dumping Basic or machine code.

SHOW gives an on-screen list of all the Turbo commands. The first main section is the Basic programming toolkit, which includes a wide range of useful routines. AUTO creates program line numbers with a user-definable step size. DEL removes whole lines of Basic from memory. FIND will display each line containing a specific string, while HELP will display errors in programs just executed — a useful function of Commodore Basic 7.0.

OLD retrieves a NEWed program; PLIST shows a listing page by page; RENUM automatically renumbers listings (though it's not clear from the manual whether it copes with referenced lines). SET allows the screen and border colours to be changed. All these facilities are very useful, but Turbo hasn't even begun to run out of uses. The Advanced section of the Basic Toolkit contains commands to convert decimal to hex and back, enable or disable function keys, autorepeat keys, trace programs as they run, and in all the cartridges except 50, list all values of variables.

The next useful section is the Function Key Programming; on power-up, the F1-F8 keys allow you to perform certain functions, such as tape to tape transfer, disk loading, listing and running with a single keypress. At last the mysterious function keys become useful!



Many users will be most interested in the range of cassette and disk commands. Turbo 50 allows you to SAVE programs to tape in a special format which reloads at ten times the normal speed; MERGE a program on tape with one already in memory; check whether a cassette save has been properly carried out; save to disk in a special format allowing a speed increase of up to five times on reloading; merge from disk; format a disk, scratch a file, rename an old file or validate a disk; or change the device number of your disk drive. Anyonee who has had to cope with the vagaries of CBM DOS will regard such ease of operation as a godsend. Turbo 50 also contains a range of COPY commands allowing programs on cassette or disk of up to 186 blocks to be backed up, to cassette or disk.

For me, one of the most useful sets of commands is the Printer utility section. This contains Centronics software allowing non-Commodore printers to be used, with a suitable connection cable. You can print out in two modes; normal, in which the Commodore graphics characters are reproduced; and LISTING mode, in which they are replaced by easy-to-read abbreviations. In Centronics operations, it's also possible to define the width of the print-out you want; no more messy listings!

The Turbo 50 cartridge also contains a useful-seeming machine code monitor, with over thirty commands in only 4Kb of memory. Although many users will never want to delve into the mysteries of machine-code — myself included! — thousands more will find the inclusion of a full-spec monitor in such a useful general utility cartridge an unexpected bonus.

Just to make sure that cassette users get the best out of the Turbo cartridges, the package also includes a cassette head alignment tape which, by a simple routine involving coloured patterns on the screen, enables you to adjust the datasette's head with a small screwdriver, until the optimum alignment is achieved.

Collection

There are five cartridges in the series. Turbo 10 contains everything but the fast disk routines and monitor; Turbo 20 is just the monitor; 30 has everything but the Centronics software and monitor; 40, everything but the fast disk routines; and 50 is the complete collection.

Apart from single-minded games players, with no interest in modifying games or writing their own programs, I cannot think of any Commodore 64 user who would not benefit from using a Turbo cartridge. Whether you count it as hardware or software, the Turbo range has a fair claim to be one of the year's best computer products.

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wizard

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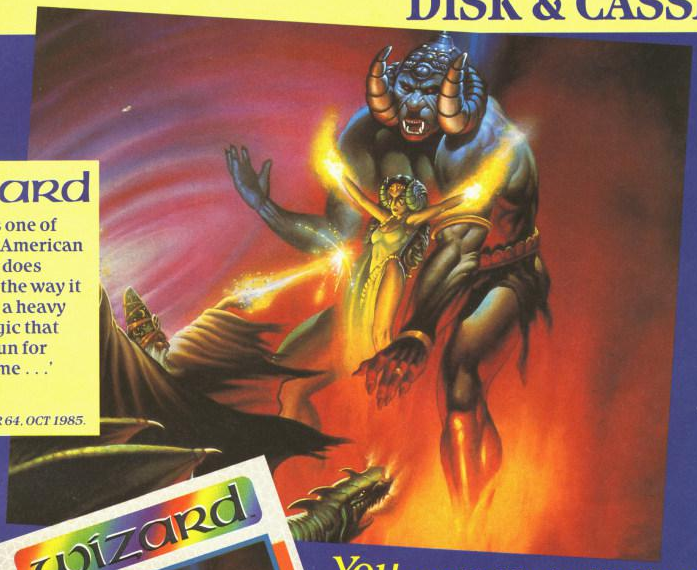

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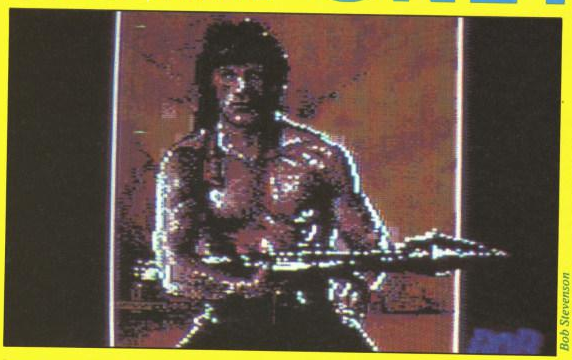
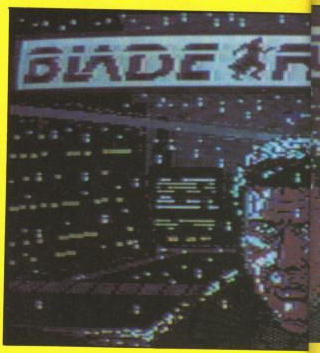


Bob Stevenson



Computer artists — this is your chance to display your skills and win great prizes. Create a picture on your micro and you can win a fabulous graphics package, and see your work in Commodore Horizons and on Compunet

THERE'S NOW a better way to learn to use your 64 to the maximum — through the interactive abilities of **Compunet.** Using the Commodore Communications modem, you can upload your own program material onto the Compunet database, or download software for your own use.

Users of the system quickly discovered the advantages of sharing programming techniques, especially in the area of graphics. What do you do with a computer picture when you have sweated blood to create it? Well, you could show it to your mates if they want to come around and look at your computer... then you can just file it. But with Compunet, you can upload your masterpiece for everyone to see. First low-res, then hi-res pictures, and now animations, regularly appear on the Compunet pages.

The first pictures which made it onto the **Picture Gallery** look, in retrospect, a little crude. Later ones are much more sophisticated. This is no accident. By putting pictures in the Picture Gallery, artists were able to share techniques with each other. Effects of light and shade, drawing circles in low-res, avoiding colour limitations, and so on, were all discussed on the Chat Line. Recently artists such as MACH 81 have been uploading frames explaining their programming techniques.

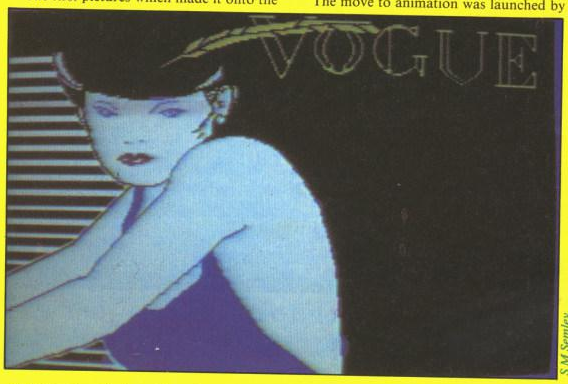
Displaying your works on Compunet has other advantages — Virgin Games' forthcoming **Dan Dare** program has a loading screen designed by Compunet artist Stu Jackson (SJ3), and the music is by another luminary, Bogg (GM3). And these are just a couple off examples of how the software houses take notice.

The move to animation was launched by one of the most stunning items ever loaded into Compunet, Bob Stevenson's "Max Headroom", which sent everyone scrambling for their disassemblers to find out how he'd done it!

Graphics aren't the only area where Compunet is of help — wandering around "The Jungle" one is constantly coming across software hints and tips.

When the Compunet literature refers to the system as User friendly, few people realise that they are also referring to the other users! I for one have learned more about my 64 and its capabilities since I joined Compunet six months aga, than I did in the previous two years — and I don't expect to stop learning now.

Alan Lenton (AL2)



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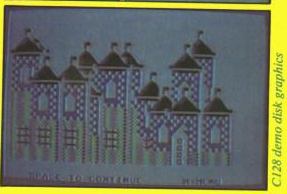

C128 demo disk graphics

PHICS CHALLENGE

Bob Stevenson

Stuart Jackson

Bob Stevenson

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COMPUTER ARTISTS can now get the chance to show off their works both in *Commodore Horizons* and on *Compunet*. To encourage you to do your best, we're offering SIX prizes of Wigmore House **MS 2000 Mouse** packages to the winners of our great competition.

The MS 2000 is a high quality mouse using optical encoding techniques to measure movements to a resolution of 100 points to the inch. It has a non-slip rubber coated ball and two positive-action click switches.

Even more impressive than the hardware is the Mouse's graphics software. Supplied on cassette, the icon-driven routines enable you to use freehand drawing, lines, rubber banding, circles, ellipses, boxes, fill, a wide pallette of colours, textures and brush shapes, zoom, copy, mirror, pan, and many other drawing features. You can also print out your efforts on the MPS printers. At £69.90, the MS-2000 mouse is the best way for computer artists to get great results from their machines.

The *Commodore Horizons/Compunet* competition is organised in three sections.

- ANIMATION — the most challenging section, in which you must create a moving display of hi-res or low-res graphics.
- HI-RES — pictures like the Compunet examples shown here, using the computer's hi-res screen routines.
- LOW-RES — pictures created using the CBM graphic character set.

There will be two Mouse winners, plus runner-up prizes, in each section.

You can enter the competition in two ways.

- ONE — if you are a Compunet subscriber, look out for competition details on the network, and upload your picture onto the competition page.
- TWO — if you do not subscribe to Compunet, you can send in your pictures to *Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP,* on cassette or disk.

In creating your pictures, you may use your own programming routines, or commercial software such as **Koala Pad, Designer's Pencil, Doodle,** and so on. Make sure that any entries using commercial software are accompanied by details of the software and/or hardware used, to enable us to reproduce your pictures.

The competition will be judged by a panel including representatives from *Horizons, Compunet,* and independent programmers.

All entries should be accompanied by your name, address, telephone number if possible, and details of software used to create the picture if relevant.

You can use any Commodore machine; 64, 128, C16, Plus/4 or Vic 20, to create your pictures. Any winners using non-64 compatible machines will be awarded a prize of equal value to the MS-2000 Mouse. In addition, ALL WINNERS and runners-up will have their pieces published in the magazine and displayed on Compunet.

The closing date for entries is January 10th 1986.

The theme of your picture is entirely up to you; film and TV characters, still life, abstracts — whatever takes your fancy. The judges will be looking for a combination of artistic skill, originality, and programming expertise if relevant.

Don't be discouraged from entering by the quality of the examples shown here — remember, the judges will be looking for originality and style as much as technical skill. May the best artists win! □

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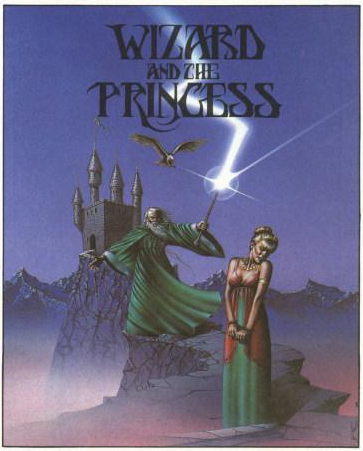

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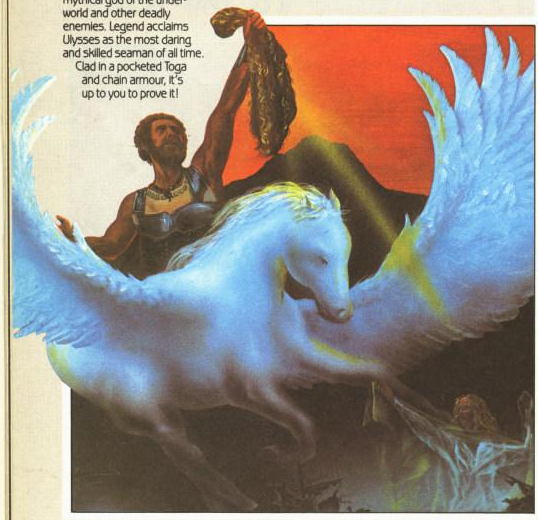

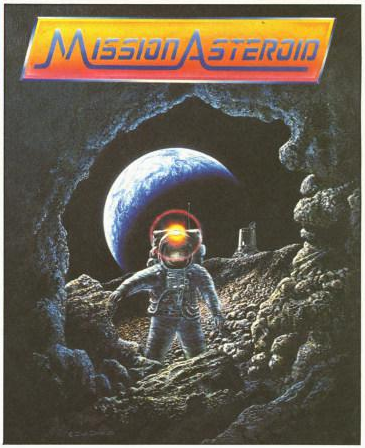

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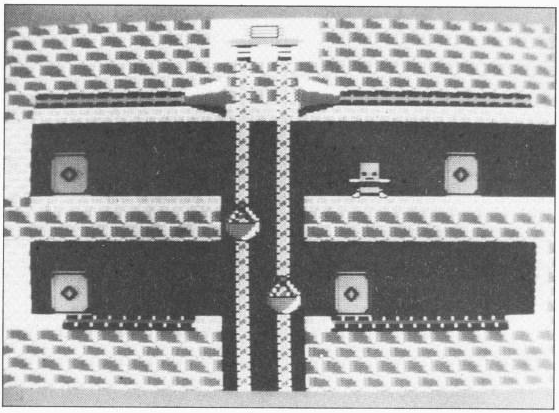

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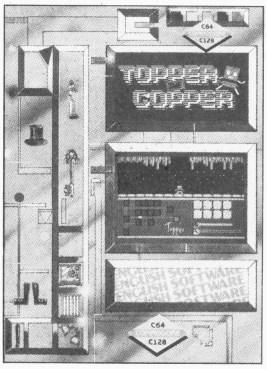

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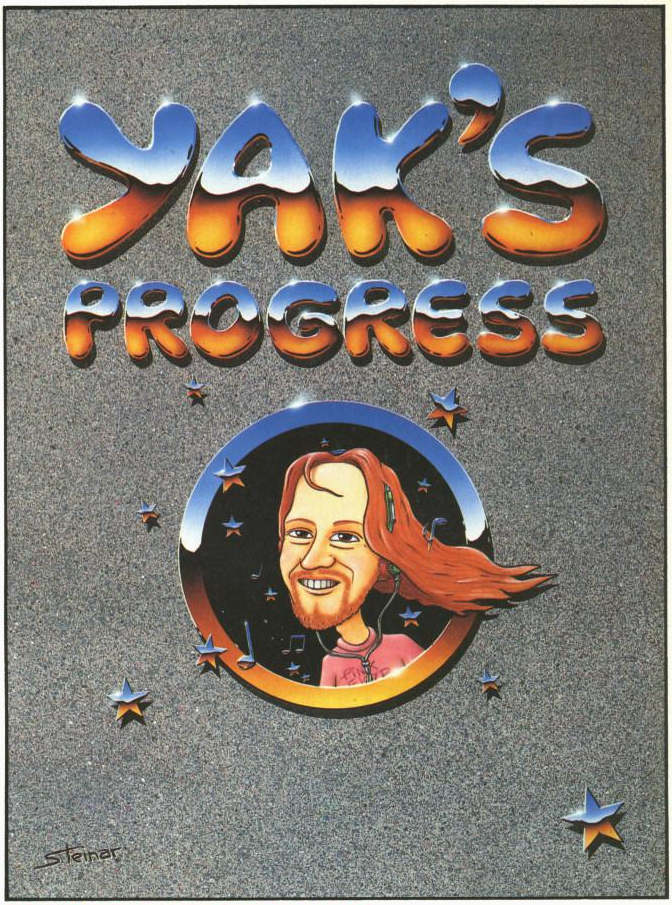

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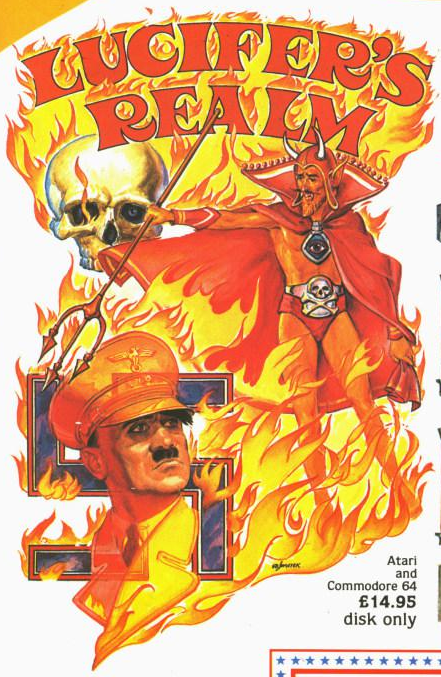

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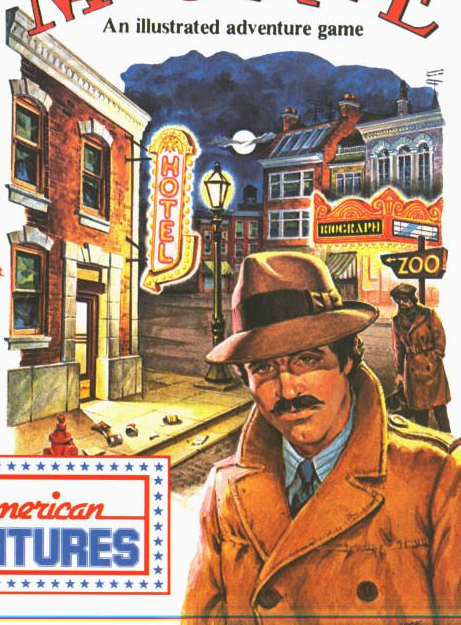

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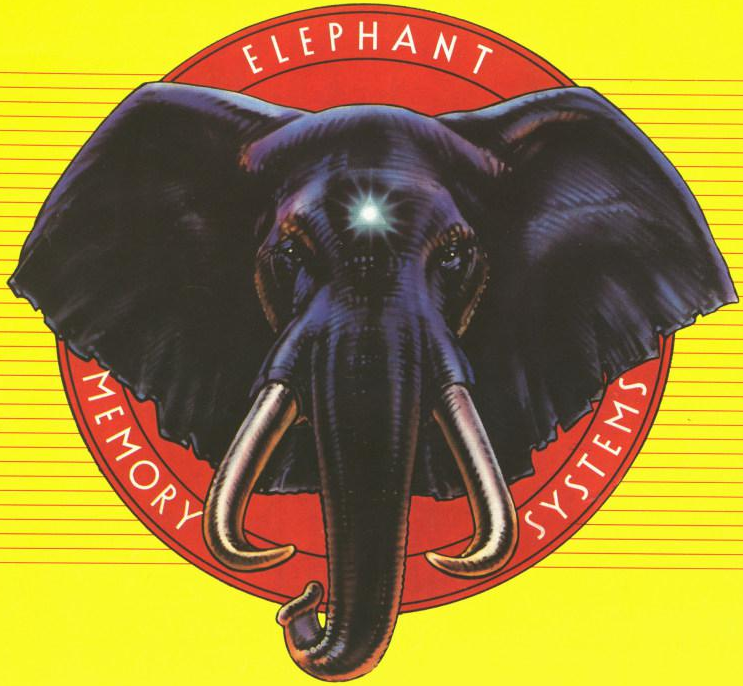

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